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SIR WILLIAM OSLER.*

By ALEX. F. ROBERTSON, Jr., M. D., Staunton, Va.

In making the subject of my address a biographical sketch, I feel that I am drawing from a field abundant with interest and teeming with inspiration. The history of medicine portrays numberless romances. When one pauses to think of the marvelous advances of the last century, and of the outstanding achievements of the leaders, he is lost in admiration, and thinks not of how well versed the modern physician is, but rather of how we of this generation may best deserve our priceless heritage. The doctor, with his all absorbing busy life, has the need of the background given by familiarity with the history of medicine—a subject, until recently, not included in the curriculum of any medical school. The announcement last year of a chair of medical history at Johns Hopkins, under Dr. W. H. Welch, is particularly pleasing, and should blaze the way for its general adoption. It is especially appropriate that this should have made its beginning in the medical school which owes its success so largely to Osler.

My father, a layman and a lover of biographies, who presented me with Dr. Harvey Cushing's life of Osler[1], remarked that Osler's life was one of the most remarkable and inspiring he had ever read, and that were he a young doctor, he should read it once each year. To those of you who have not read this life, I commend it most highly, not only for its historical interest, but also for the wonderful inspiration it contains. Even had I the ability, time does not permit me to do justice to my subject, and I must therefore describe very briefly the important phases in the life of a man claimed with equal fervor by three countries.

William Osler, the youngest of nine children, was born July 12, 1849, in the backwoods of Canada. Of Welsh descent, his parents had come to Canada ten years before, as missionaries, and reared their children amidst the rigours of frontier life. As a boy, he was quite athletic, full of fun and pranks, which on more than one occasion, got him into trouble. At the age of sixteen he was sent to school at Weston, where he came under the influence of the Rev. W. A. Johnson, warden of the school. Johnson, in addition to being a philosopher, was a naturalist, and under his tutelage, Osler became intensely interested in botany. Dr. James Bovell, medical director at Weston, had a deep interest in biology, which Osler immediately took up, spending all of his spare time in expeditions in the fields and microscopic study. These two men had a lasting influence upon him, particularly Bovell, so that after a year at Trinity College, studying the arts, preparatory to entering the ministry, he decided to study medicine, and accordingly entered the Toronto Medical School in 1868.

At Toronto he entered into his work with great earnestness. He took the greatest interest in anatomy and spent many hours in the dissecting hall, often taking a sandwich and spending his lunch hour there. During his second year he discovered trichina in the muscles of a German cadaver. Although the condition had been described by Paget in 1835, very little was known of the disease in America at that time. Osler attributed his discovery to his interest in biology, which continued to occupy much of his spare time and holidays. This second year he had a room at Dr. Bovell's house and became interested in his library containing many choice books. During the summer of 1870 he decided to leave Toronto and spend his last two years at McGill in Montreal, where the hospitals offered greater clinical advantages to the students.

While a medical student, Osler started many of his life habits. One of these was to read good literature, not medical books, for half an hour each night after going to bed. Another was to read with note book and pencil in hand, so that he might jot down striking facts. In the course of his reading he adopted

*Presidential address delivered before the Medical Association of the Valley of Virginia, May 26, 1927, at Clifton Forge, Va.

1. The Life of Sir William Osler, by Harvey Cushing, M. D. Vols. I and II, Oxford, at the Clarendon Press, 1925.

for his own, Carlyle's thought, "Our main business is not to see what lies dimly at a distance, but to do what lies clearly at hand." At McGill, Osler was adopted by Dr. Palmer Howard, a splendid teacher and clinician, and a steadying influence on his development. When Osler graduated with high honors in 1872, he had firmly intrenched himself in the hearts of students and professors alike.

Post-graduate study abroad followed, and for the next seventeen months he was found in London working at histology and physiology, under Professor Burdon Sanderson and others of a most stimulating group. The esteem in which he was held at McGill is evidenced by the offer of the chair of botany at this time, when he was only twenty-three years of age. During this period he attended clinics given by such celebrities as Jenner, Wilson, Fox, and Ringer. In 1873 he discovered blood platelets, and, after reading a paper on the subject before the Royal Microscopical Society, was elected a member. In October, he went to Germany and spent three months in Berlin, where much of his time was occupied watching the careful autopsies of Virchow. We next find him in Vienna for five months attending various clinics. Returning to Canada early in '74, he was appointed Professor of the Institutes of Medicine at McGill, at the age of twenty-five.

Osler claimed for himself a single talent, a capacity for industry, and the amount of work that he was able to do is truly remarkable. As a teacher, he was first and last a pioneer. At McGill he departed from the stereotyped form of lectures and threw his heart and soul into making the courses attractive. He volunteered for work in the pathological laboratory, and began doing autopsies for visiting physicians and surgeons. These he did so well that after two years a new position of pathologist to the hospital was created for him. In the following year he made one hundred autopsies, all carefully worked up and described, and nearly a thousand before leaving. In the meantime, keeping up his interest in biology and comparative anatomy, he was appointed Professor of Physiology in the Veterinary College of Montreal in 1877. The following summer he spent in England in clinical study, the beginning of his "quin-quennial brain-dustings," which habit helped to keep him abreast of the times. While there he took examinations for admission into the Royal College of Physicians, of which he became a Fellow in 1883.

A few years after coming to Montreal he organized the McGill Medical Society for undergraduates, and later on organized a similar society at Johns Hopkins. One can well imagine the inspiration and help obtained by the medical students thereby, and the value of this experience in later life.

After ten years at McGill, Osler was called to the University of Pennsylvania as Professor of Clinical Medicine, at the age of thirty-five. He immediately plunged into work, rigged up a small clinical laboratory, and gave the students their first experience in real bed-side instruction. His arrival was described by a student as "a breath of fresh air." For his five years in Philadelphia he continued his pathological work by doing post-mortems at Blockley in the afternoons. At each place Osler went, he organized a journal club and encouraged the men to review foreign and rare medical literature.

In 1889 he accepted a call to Johns Hopkins Medical School, just completed, as Professor of Clinical Medicine, and there organized the clinic which gave post-graduate courses until 1893, when the undergraduate school was opened. In May and June of 1890, he was abroad inspecting the leading clinics of Germany and France. While at Hopkins he established a historical club and the Laennec Society for the study and prevention of tuberculosis. The clinic established by Osler, at Johns Hopkins was unique at that time, but has now been universally adopted. The experiment, as it was then called, of largely substituting practical work in the wards and dispensaries for didactic teaching in the junior and senior years was watched with interest and a certain amount of scorn by other schools.

Osler established a custom in Baltimore of having two of his clinical clerks to dinner each Saturday at seven o'clock and at eight o'clock the rest of the group for cheese and beer. An hour would be devoted to a discussion of their patients and the week's work, and then Osler would give a talk on one of his favorite authors and exhibit early editions of their works. By this means teacher and student learned to know one another intimately.

In 1905 he sailed for England to assume his new position as Regius Professor of Medicine at Oxford, which he occupied until his death

in 1919. There the teaching was optional to a large degree, but he started in with a group of fifteen juniors and put into practice his bedside teaching at the Radcliffe Infirmary. In addition to this each Sunday morning he gave a consulting clinic at the infirmary for the benefit of the countryside physicians. At Oxford, teaching was on a much smaller scale, and is well nigh lost sight of among his manifold other activities.

But aside from his teaching, many of his other qualities deserve special mention. As a clinician Osler was brilliant. His pathological work, and particularly the postmortems, laid the foundations for a wonderful knowledge of diagnosis. He never entered private practice, and did not encourage consultations. In fact, his time was so fully taken up with teaching and literary pursuits that he had little time for them. In Baltimore he had office hours from 2—4:30, but not until 1898 did he have many consultations. After this they became so incessant that they, probably more than anything else, influenced him to leave Johns Hopkins and go to Oxford. Before and during the greater part of the nineteenth century, drugs were used largely empirically, and in the greatest profusion. Osler was one of the first to realize that many acute diseases are self-limited and not influenced by drugs. He was considered a therapeutic nihilist, but the study of an early addition of his text-book shows his drug therapy a generation ahead of his time. He believed thoroughly in certain drugs, but only when they were clearly indicated. As a consultant, he was always most kind and fair to his fellow practitioner, and always ready to give his services to physicians and their families. Combined with his medical knowledge was a full understanding of human nature, a sunny disposition, and a rare sense of humor which made him an ideal physician.

Osler regarded attendance at medical meetings as one of his professional obligations, and was to be seen at all of the important meetings, reading papers and taking an active part in discussions. Shortly after his appointment to McGill, we find him revivifying the old Medico-Chirurgical Society which was practically moribund, and taking an active part in every meeting. He served as secretary and later as president of the Canadian Medical Association. He played a leading role in the Philadelphia Pathological Society, appearing before it fifty-two times in four years. He was one of the founders of the Association of American Physicians, and also served as president. He put new life into the dormant Medical and Chirurgical Faculty of the State of Maryland, which he also served as president. In 1891 he was elected president of the American Pediatric Society. In England we find him president of the National Association for the Prevention of Consumption in 1910, and of the Medical Section of the International Medical Congress held in London in 1913.

As a writer, Osler's outstanding attainment is his text-book, Principles and Practice of Medicine, published in 1892 and revised by him eight times. Probably every member of our association has studied this book. I remember as a medical student I used to call it my Bible To me it is nothing less than a miracle that any man could finish the manuscript of such a book in the incredibly short time of nine and a half months, and still keep up his other interests and activities. The beautiful English of this book, its clearness and its frank statement of the lack of scientific knowledge about many diseases, had far-reaching effects. In 1897 Mr. Gates, a member of Rockefeller's philanthropic staff, read the book from cover to cover, and was so impressed with the need for research work in medicine that he brought the matter to the attention of Mr. Rockefeller. Five years later this bore fruit when Rockefeller gave one million dollars to Harvard and established the Rockefeller Institute for Medical Research, after which Mr. Gates wrote to Osler, "Both of these gifts grew directly out of your book". By triennial revisions the book was kept up to date, and, translated into French, German, Spanish, and Chinese, it has probably enjoyed a wider circulation than any other medical book.

Osler's love of good literature helped make his style of writing remarkably good. Naturally clear and concise, his purity of English made all that he wrote real contributions to literature. Before writing his text-book, he had contributed sections to three different Systems of Medicine, to Wilson's Applied Therapeutics, to Dercum's Text-Book on Nervous Diseases, and to an Encyclopedia on Diseases of Children. In 1910, in collaboration with McCrae, he published his own System of Medicine in five volumes. While in America he became interested in medical biography, and many of his papers in England were biographi-

cal sketches. He was in great demand for such public occasions as the dedication of a new medical school or library, addresses to graduating classes, and endowment lectures on subjects ranging from Harvey to Immortality. While not an orator, his sincerity, earnestness, and the worth of what he had to say, always gained for him large audiences.

After his farewell address at Johns Hopkins he was severely and unjustly criticized by the press—especially the yellow journals. In this address he said that one of his obsessions was that the real creative work of the world was done by men between the ages of twenty-five and forty, and that men above sixty were useless and should retire. He then told of a plot in Anthony Trollope's "The Fixed Period", in which men at sixty were retired for a "year's contemplation before a peaceful departure by chloroform". He added that, while the benefits of this could be seen, he was a bit dubious about the chloroform, as he was himself approaching the limit—he was then fifty-five. The next day's headlines in the papers read, "Osler Recommends Chloroform at Sixty." Many of his friends tried to induce him to retract the statement, but he refused to make any reply.

In the spring of 1919 the Johns Hopkins Hospital Bulletin published a bibliography of Osler's writings—730.

Osler's interest in biographies and the classics has already been mentioned. Libraries were his hobby and the later years of his life find him devoting a great deal of time to his own splendid library, which he left to McGill. In every place he went, he became actively interested in the local medical library, and was untiring in his efforts to build it up by his personal work and by interesting others to help. As an example, in 1891 he was placed on the library committee of the Medical and Chirurgical Faculty of Mayland, and by 1905 the library had grown from a few hundred old books to 15,000 volumes, and necessitated two moves. At Oxford he took an active interest in the Bodleian Library of which he was a curator, and the library of the Royal Society of Medicine, and in 1913 we find him president of the Bibliographical Society. In both England and America Osler established Medical Librarian Associations in which he took the greatest interest and to which he was a constant source of inspiration. But for a full appreciation of this side of Osler we must refer you to his biography and pass on to another phase, his personal influence and his influence on public opinion.

Osler was a personified Renaissance, and Cushing speaks of him often as an enzyme. His ability not only to do a prodigious amount of work himself, but also to make others emulate his example is well expressed by W. W. Keen, "Wherever he went the wheels began to go round, things began to be done, and all for the good of the profession and of the community. The dry bones, as in Ezekiel's vision, gathered themselves together and became imbued with active life. The diligent were encouraged to become more diligent, the slothful were shamed into activity. He was a fount of inspiration. His personal influence extended more widely and to better purpose than that of almost any one I have ever known." A glance at Osler's bibliography will show his interest in public health and in the burning questions of the moment. On the occasion of his first appearance before the Medical and Chirurgical Faculty of Maryland just after his call to Johns Hopkins, instead of complimenting them, he fearlessly criticized the prevailing systems and standards of medical education, and gave a prophetic outline of the new ideals to be attained. During his American period he was constantly awakening the national conscience to the necessity of instituting proper hygiene and sanitation for the eradication of Typhoid Fever and Tuberculosis. As Cushing says of him, "His time, his pen, and his great personal influence had almost as much to do with the modern sanitary improvements which Baltimore has come to enjoy as Virchow's influence had to do with those instituted during the 80s in Berlin. But his vigorous early participation in what has become a world-wide campaign against tuberculosis must stand in the forefront of the many public services he rendered—services which in large measure have been lost sight of in the maze of his other activities". These accomplishments aroused the interest of Mr. Phipps, a philanthropist, who made several large donations for Tuberculosis work at Johns Hopkins as well as in England. After his Oxford transplantation he carried the anti-tuberculosis fight to England and was there the leading figure in the crusade.

Both in America and England he took an active part in the fight against the obnoxious anti-vivisection legislation. Upon his arrival

in England, the Oxford Press published very few medical books, while today, it ranks well with any of the medical publishers of England or America. This is due largely to Osler's help and his international influnce in the medical world. He was largely instrumental in bringing about the amalgamation of seventeen out of twenty rival London medical societies, and organized the Association of Physicians of Great Britain and Ireland.

Before the World War he is found appealing for reform of the English system of teaching and examinations, and this was made the subject of many of his talks. During the war, an honorary colonel, he took a most active part as consultant at various hospitals and acted as a go-between with the War Department. All troubles were brought to him, and so successful was he in smoothing them over that he was dubbed Consoler General of the British Army. The anti-vaccinationists were so strong in England in 1914 that compulsory vaccination was not adopted in the army, and Osler spent much of his time addressing recruits and urging them to volunteer for vaccination again typhoid. He also wrote a number of articles to the papers on this subject. Throughout the war he exerted a calming influence by his cheerfulness, devotion to duty, and uncomplaining sacrifice of time, money, and his only son.

That Osler was esteemed for his scientific worth is attested by the fact that he had offers from six universities,—McGill and the University of Toronto offering him the presidency; that he was given honorary degrees by a score of the leading Universities of Canada, America and England; that he was one of six doctors who have ever held the presidency of the British Association for the Advancement of Science; and that he was given a baronetcy in 1911. An idea of the love and appreciation of his colleagues may be seen in the five hundred physicians present at a farewell dinner given to him in New York in 1904, and in the thousands of messages—cables, wires and letters—which he received when he was given his baronetcy, when his son, Revere, was killed in France, and when he celebrated his seventieth birthday.

Finally the estimation of Osler as a man brings us to the most lovable part of his character. Many of his traits such as his industry, his activating influence upon others, and his sense of humor, have been mentioned. One of his characteristics was getting up complimentary dinners for people on suitable anniversaries, and of suggesting a portrait—always accompanying his suggestion with a donation. His generosity was marked; in fact, he was an easy prey for beggars, whom he never refused to help. He gave freely to libraries and other causes, and after the Baltimore fire in 1904, before Rockefeller had come to the rescue of Johns Hopkins, he offered to give his salary of $5,000.00 a year for ten years to keep up hospital publications.

In Baltimore and Oxford the Oslers kept open house. There was a continuous stream of guests and every one was made to feel at home. As No. 1 West Franklin St. was headquarters for Canadians and other visitors to Baltimore, so was the Oxford home, "Open Arms" as it was appropriately called, the magnet which drew all Americans. During the war the 'Open Arms" was a veritable rest haven for soldiers and a meeting place for Rhodes scholars.

Osler's devotion to his family, to old people, and to children was most attractive. His visits to homes were often only an excuse for a romp in the nursery, which he always visited first. With children he was a great favorite, entering into the spirit of their play and inventing the most fascinating games. His married life was unusually happy. While in Baltimore he married the widow of Dr. S. W. Gross, a great grand-daughter of Paul Revere. Their only child, Edward Revere, was the idol of his father's heart, and his death in the World War, in August, 1917, was a blow from which Osler never recovered, though outwardly he gave no sign of his mortal sorrow, but engaged in his numerous activities with his usual cheerfulness and interest.

Osler was all his life subject to bronchitis and bronchopneumonia, but in sickness he was cheerful, considerate, and made light of his maladies—characteristics regrettably absent in most of us. His time in bed was devoted to the classics, early medical works, and correspondence. When stricken with his final attack of bronchopneumonia, September 28, 1919, he realized it was the end. It is comforting to know that one who had so often come from the bedside of a dear friend "whistling that he might not weep" should write thus toward the end :"The experience has been encouraging—discomfort of course, but no actual pain, and, except for the worry about leaving dear ones,

singularly free from mental distress". In the afternoon of December 29th he died quietly and without pain.

One of his students wrote, "Wherever Osler went, the charm of his personality brought men together; for the good in all men he saw, and as friends of Osler, all men met in peace". To my mind his life expresses the true symbol of the spirit of medicine. My hope is that this spirit may always bring us together in peace, dropping our petty jealousies, composing our disputes and differences, co-operating and ever dealing fairly with one another, and, above all, remembering that in the honorable profession in which we are enrolled, the world passes judgment, not on what the Oslers of our calling accomplish, but on the every day life of each one of us.

BLOOD PRESSURE WITH SPECIAL REFERENCE TO ESSENTIAL HYPERTENSION.*

By NICHOLAS G. WILSON, M. D., Norfolk, Va.

In order to understand the abnormal, we must first know the normal; and because, as applied to blood pressure, we are not agreed on either of these qualities, efforts to clarify the subject have not been very successful.

When we recall that the sphygmomanometer has been in general use not longer than twenty-five years, and that prior to that time our estimates of arterial tension were necessarily based upon the feel of the pulse and sounds of the heart, it is obvious that what knowledge of the condition we have has been fairly recently acquired. Even so, but few years have elapsed since a large proportion of our profession accepted the dictum that one's normal pressure should be equal to his age plus a hundred.

We are accustomed to think of the arterial system as consisting of elastic tubes, the smaller of which contain sufficient circularly placed unstriped muscle fibers to decrease or increase their calibre, depending upon the impulse reaching the muscle through its innervation by the sympathetic system, but inactive unless thus specially excited. Blood flow through the capillaries is supposed to be kept up by the systolic impulse from the ventricle, aided by the elastic squeeze of the arterial wall. Not long since, Russel, an English author, wrote: "In considering the movements of arteries, it is to be noted that they have a pulsatile movement, probably a rhythmical response to the flow of the blood, corresponding with ventricular systole and diastole. It is probably not merely the stretching and contraction of an elastic tube by a wave passing along its contained fluid, but the same kind of unceasing, rhythmic movement the heart possesses." Nor does this property cease with termination of the arterioles. Christian says that in the frog's kidney, the glomerulus may be seen to rhythmically expand, flush, and then contract until almost invisible. Hinselman and other observers have noted that in the acute toxaemias of pregnancy, there is intermittent spasmodic contraction of the capillaries at the base of the nail. If this conception of the arterio-capillary system as an active pulsatile organ may be accepted, we can more easily comprehend the extensive variations in blood pressure occurring in nervously unstable but otherwise normal individuals, on account of psychic or reflex influences. In examining individuals of this type, especially if, by prolonged or repeated auscultation of the heart, attention has been directed to that organ, it is common to find systolic pressures of 160 to 170. If the examiner is diplomatic, the psychic element is easily removed and the pressure rapidly returns to its normal level. This type of transient elevated pressure is invariably accompanied by a corresponding rise in pulse rate, and the coincidence of the two phenomena—rapid pulse and elevated pressure—should make us consider psychic influence as a causative factor. The opposite of this condition is that of reflex or psychic shock with active dilatation of the arterio-capillary system, especially in the splanchnic area,—slow, weak pulse, and fainting, or other result of circulatory failure. That both of these conditions may occur under differing circumstances in the same individual serves to show how extremely sensitive to its nerve control is the arterial tree, and it is not surprising that arterial tension should be influenced by a large number of abnormal bodily conditions.

Normal blood pressure is an individual characteristic. One may begin adult life with a systolic pressure of 90 and another of 120, and, insofar as our present knowledge goes, both are normal. However, if the pressure of the former reaches that of the latter, or vice versa, we know that something is wrong! Our ideas

*Read before the Norfolk County Medical Society, in March, 1927.

concerning low and high normal limits of blood pressure have changed materially within a decade. Writers of ten to fifteen years ago regarded minimal systolic pressure as from 90 to 100 in women, and from 100 to 115 in men as distinctly abnormal, and many were the remedies used in an effort to raise them to normal. Fortunately, with the exception of disturbance of the patient's mental equilibrium, no harm resulted from these efforts.

When one observes women with pressures not exceeding 90 to 100, without faltering, or any evidence of physical or mental incapacity, undergo the stress of pregnancy and childbirth, not once only, but several times,—or men with pressures of 100 to 115, carrying on in business, successfully matching wit, sagacity and endurance with supposedly more fortunate men who have higher pressures and therefore more stamina, one is loath to regard their low pressures as being abnormal.

Turning to the question of maximal normal pressures, we find that moderate increases that used to be considered negligible are today looked upon with grave suspicion. In his monograph, Nicholson states that before middle life a pressure of 145, and after that period, of 160, needs explanation. W. C. Alvarez states that in 22 per cent of healthy college men he found pressures of 140 or over. In the light of present day knowledge we cannot help feeling that Nicholson's danger line is too high, and that Alvarez was dealing either with psychic pressures or else with men who had followed athletics from high school up, and who really had athletic hearts. In a pamphlet, entitled, "The Diagnostic Value of the Sphygmomanometer in Examinations for Life Insurance", issued in 1922 by The Northwestern Mutual Life Insurance Company, it is stated that analysis of blood pressure readings on 65,000 men between the ages of sixteen and sixty, insured during the period between 1915 and 1920, led them to adopt normal average pressures varying between 117/75 at sixteen and 132/85 at sixty. A very moderate increase in these arbitrarily adopted figures is considered by them as sufficient cause for rejection of the applicant, and while their maximal limit seems very conservative, we must recall that it is actually based upon their mortality experience, which after all is the criterion by which the condition should be judged. In 525 individuals rejected solely because of systolic pressures 10 to 14 m.m. above the average, the mortality (their normal expectancy being represented by 100) was 136.1. In 1685 with pressures 15 to 24 m.m. above average, the mortality was 183.8, while in 909 whose pressures were 25 to 34 above average, the mortality was 204.4. Contrast these figures with those of a series of 3,389 with pressures of 100 or less, where the mortality was 35. It is to be noted that there were no women in these groups. Analysis of this experience, which is common to most of the old line insurance companies, would seem to indicate that the individual with a systolic pressure 10 to 15 m.m. below the general average has about four times the chance of longevity as the one whose pressure is 10 to 15 m.m. above it.

Intelligent interpretation of the significance of any blood pressure reading depends upon knowledge of previous readings in the same individual. This is especially important in obstetric practice. J. C. Hirst states that the average systolic pressure in women of child bearing age is 112, and the average in these same women when pregnant is 118. It is obvious that in a woman whose non-pregnant pressure is 90, a rise to 118 may have a serious significance; whereas in another woman whose non-pregnant pressure is 120, a rise to 125 or 130 may mean nothing.

In beginning consideration of essential hypertension we must admit that the name is a confession of ignorance. It's causes are unknown and are still being diligently sought after. VonMonakow says, "High blood pressure is a symptom which, similar to fever, has no uniform etiology." It is so insidious in its development that, as a rule, when the diagnosis is finally made, one may elicit a history of warning symptoms, occurring over a period of a number of years, yet not sufficiently obvious to induce the patient to seek advice. After full development the picture is so obscured by complicating conditions that the original cause cannot be determined. The designation essential is restricted to those cases of hypertension in which this condition seems to be primary. While, as before stated, the cause is unknown, there is agreement among many observers that in this disease the evidence accumulated points to two dominant factors: first, a predispostion to the disease, due either to a vice of constitution or to some hitherto undiscovered organic discrepancy, and, second, to the presence in the blood of some pressor substance, acting either on the vaso-

constrictor center or directly on the arterio-capillary system.

The search for such a substance or substances has focused attention upon those resulting from breaking up of the protein molecule, especially guanin and its oxidation product, guanidin. Guanin is set free in the tissues by the action of special enzymes on nucleic acid, after which by de-aminization it is converted into xanthin. This, in turn, is converted into uric acid by an oxidase found only in the liver. Both guanin and guanidin are found in varying amounts in the intestinal tract. A small proportion of these substances is taken into the stomach preformed in meats, but the greater part is the result of proteolytic action. Absorption of them depends upon the amount and the presence or absence of intestinal stasis. From an empirical standpoint, eating too much animal protein and constipation have by many been considered probable factors in the causation of hypertension, and it is interesting to know that science seems about to prove the correctness of their theory.

In May, 1924, R. H. Major, in *The Bulletin of Johns Hopkins Hospital*, published the results of his first experiments with methylguanidin, a normal constituent of the urine, as a pressor substance. They were spectacular. In dogs, intravenous injections of 1/10 gramme per kilo of body weight caused in one minute a sharp rise in pressure, followed by a more gradual rise to a maximum in from ten to twenty minutes. At the end of thirty minutes, repetition of the dose induced a second rise to 210 m.m. or more. In one dog it rose to 240 m.m. and was sustained at that point, without further injections, for four hours. Several animals showed convulsive twitching of the legs and face. Subsequently, similar experiments on human beings gave almost identical results. However in no instance was more than one injection given, the dosage varying between 45 and 80 m.g. per kilo. Following the injection, the heart beat was invariably slower and stronger, and the apical impulse more forcible. In dogs, the result of cutting the vagi indicated that the hypertension was probably caused by a powerful vaso-constrictor effect.

On July 31, 1926, in the *Journal of the American Medical Association* Dr. Major reported that further study of the urine in certain cases of hypertension showed diminished output of quanidin compounds, when compared with normal controls, and that in two patients with marked elevation of blood pressure he found great increase in excretion of these compounds coincident with a fall in pressure. Later he has reported the continuance of his work along these lines, always with complete corroboration of the results of his earlier work.

Unfortunately, as yet no simple or accurate clinical method has been devised for estimating the blood content of these substances. Incidentally, Major has likewise shown that the pressor effect of methylguanidin is almost specifically neutralized by the anti-pressor substance present in the liver, and that in an animal with a normal pressure a dose fifteen to twenty-five times that required to lower to normal the elevation due to methylguanidin is *not* followed by a fall in pressure. When we recall that guanidin is ultimately converted into uric acid by a substance found only in the liver, we may be pardoned for entertaining a suspicion that this great organ, that for centuries has borne the burden of the doctor's ignorance, may hold the key to the riddle of essential hypertension.

If it be true that this diease, or symptom complex, is due to pressor substances in the blood, we should expect to find, preceding its development:

First—the entry into the system from the intestine of increased amounts of split protein products, as induced by eating too much meat, and by constipation.

Second—incomplete functioning of the liver by reason of damage, from whatever source, of its parenchymal cells, and,

Third—incomplete functioning of the kidneys, whereby elimination is interfered with.

A careful study of the literature pertaining to essential hypertension discloses the fact that while so little is known of its actual causes, many conditions, which may roughly be classified in one or the other of these divisions, have preceded it.

Thus, the harassed business man, whose worries have induced a psychic hypertension, is too busy to go home to lunch and a short period of relaxation, is constipated, and eats too much protein. Add to this picture an infectious focus, or some dormant sequel of an acute infectious disease of early life, and what more effective combination can be conceived?

Again, the toxaemias of pregnancy, whether of the so-called renal or eclamptic type, frequently precede the development of hyperten-

sion. Many observers have stated that this is exceptional, but the writer is convinced that if these cases are followed, not for five or six months, but for many years, it will be found that few escape the condition. From clinical observation the writer also is convinced that eclampsia is virtually never purely renal or purely hepatic, but an involvement of both systems, the one or other preponderating.

Johnson and Adams, of the Mayo Clinic, report the case of a woman, age thirty-four, whose only pregnancy, eight years before, was terminated in the eighth month because of a typical eclamptic toxaemia. After delivery all signs and symptoms of toxaemia rapidly disappeared and six months later she was considered absolutely well. She remained so, apparently, for four years, and then, after nursing her husband through a prolonged illness, was found to have hypertension of the essential type. During three years under their observation her pressure averaged 215/100.

Edgar states that 75 per cent of eclamptics recover completely, the urine subsequently showing no abnormalities. Unfortunately for this statement, in the vast majority of cases of hypertensive disease, it is only in the later stages that the urine shows anything of consequence.

In the *Journal of the American Medical Association* for February 12, 1926, Corwin and Herrick, of New York, analyze the study of 165 cases of hypertensive toxaemia of pregnancy, with relation to chronic cardiovascular disease. None of these patients had eclampsia, or any but very slight albuminuria. They consider as hypertension any pressure over 140. After a follow-up period of from six months to six years post partum, 74 per cent showed some degree of cardiac hypertrophy, retinal changes, brachial and radial sclerosis or hypertension. Thirty-seven per cent showed persistent hypertension. Of fifty-two cases observed in one or more pregnancies, subsequent to the one first attended by toxaemia of this type, fifty showed hypertension in the subsequent pregnancy. They state that patients manifesting this type of disturbance should be observed over a series of years for evidence of cardiovascular disease. One case from the writer's records may be cited in corroboration of these findings. In September, 1917, Mrs. B., age twenty-six, when five months pregnant, came under observation. She had two children, aged five and three years, and had some edema of the feet and legs in the last month of both pregnancies. Her physician told her he feared convulsions during her first labor. She had appeared entirely well in the interval that preceded her third pregnancy. Her blood pressure was 130/80 and her urine was quantitatively and qualitatively normal. As a precautionary measure, a low salt and protein diet was prescribed. In spite of this precaution, by the beginning of the ninth month her pressure had risen to 180/100, with a trace of albumen and a few hyaline casts in an otherwise normal urine. Two weeks later it seemed wise to induce labor, which was done. Evidences of toxaemia rapidly subsided, the urine became normal, and seven weeks post partum she seemed entirely well, with a blood pressure of 125/70. She continued so for a year, at the end of which time she removed to another state. In August, 1926, during a visit to Norfolk, examination disclosed no other abnormality than a blood pressure reading of 150/90.

So strongly does evidence indicate the danger of pregnancy toxaemias subsequently resulting in hypertensive disease, that for a number of years, it has been the writer's practice to induce labor, regardless of the period of the pregnancy, when the systolic pressure has gradually risen to 170 or 180, and is not favorably influenced by treatment. An exception to this rule occurs when, for some good reason, it is especially desirable to deliver a viable child, but those interested should be plainly told of the grave risk incurred by delay.

Hypertension usually accompanies acute nephritis and frequently the mild subacute involvements following most of the acute infectious diseases in children. As a rule, on subsidence of the renal condition, the pressure returns to normal, but occasionally after a period of months or years has elapsed, hypertension will be found, and the urine will be normal. These are classified as being of the essential variety, and develop as such, but there can be but little doubt that there is in them some renal damage, too slight to be detected by the usual methods of investigation, and showing no nitrogen retention in the blood.

It is possible that this occult renal deficiency and a similiar liver damage, curtailing that organ's detoxicating powers, may be potent factors in the causation of hypertensive disease. Further development of blood chemistry may

be expected to throw light upon this obscure condition.

In recent years, a great deal has been written about hypertension occurring at the period of the menopause. It must not be forgotten that at this time the sympathetic nervous system is extremely unstable. The writer cannot recall having observed a woman with this condition in whom the pressure subsequently returned to, or even near, normal, indicating the probability that hypertension existed prior to the menopause. Christian says that the endocrine glands have no bearing on essential hypertension.

A cause of this disease, that science will some day throw light upon, is the familial tendency to its occurrence. When asked for an explanation of it, Sir Wm. Osler said he did not know any cause, unless it was because a poor quality of tubing was used in making up these individuals. In this connection let me cite the record of a family under my observation during the past thirty years. While they present several types of cardiovascular renal disease, they are of sufficient interest to report without apologies for the digression.

Father (B. J.) died, age forty-five, of apoplexy. Mother (E. J.) died, age sixty-eight, of cardio-renal disease. Of the six daughters: Mrs. B. died, age twenty-four, of eclampsia. Mrs. L. died, age twenty-seven, of eclampsia. Mrs. T. L. died, age forty-one of eclampsia. Mrs. F. died, age thirty-nine, of cardio-renal disease, having had eclampsia with three pregnancies. Mrs. W., age forty-seven, has had four children, and is alive and well. Mrs. R., a widow, age thirty-six, has one child, age sixteen. Pregnancy and labor were normal except that she had slight edema of the feet in the last month of pregnancy. She now has marked cardiovascular disease with a constant pressure of 170/100. Of the three sons: D. died, age forty-five, of apoplexy. J. died, age forty-two, of apoplexy, while W. D., age thirty-nine is alive and well.

Among the many causes of hypertension may be mentioned over-exertion, as of athletes anl laborers. This is mechanical in its operation, and is most serious in the presence of arteriosclerosis and infection.

Essential hypertension is usually described as existing in two types, benign and malignant, and the benign type is subdivided into the mild and severe form. A few cases are distinctly typical, but the great majority of them partake of the characteristics of more than one group. From a study of the disease, one must conclude that the cause usually is operative over an indefinite period of months, or, more probably, years, without attracting attention. Very rarely do we have the opportunity of watching its development. As a rule, when discovered it is fully developed, and a history of various types of headache, indigestion, and mild palpitation may, by careful questioning, be elicited. In the mild benign type there may, or may not, be found differing degrees of cardiac hypertrophy, and very little evidence of arteriosclerosis. Usually the urine and blood chemistry are virtually, if not entirely normal. Individuals in this condition who will recognize and live according to their limitations may live to reach, or exceed, the allotted age of mankind. As an example let me cite the case of Mrs. S., age fifty-seven, who, prior to the birth of her fourth child, in 1903, had mild hypertensive toxaemia. In July, 1905, my record states that she had hypertension, a slight degree of cardiac hypertrophy, the apex beat being just inside the mid-clavicular line, and a normal urine, except for the presence of a trace of albumen. She was instructed as to the general rules that should govern her life, particularly the reduction of her weight, which was considerably above normal. She was not again seen professionally until January, 1915, ten years later, when she came, not for herself, but to bring her son for examination. She stated that she was continuing to live according to my instructions, had not even felt sick since my last previous examination, and had no palpitation, dyspnoea, headache or edema. Her urine was normal and her blood pressure 260/130. One year later her pressure was 230/120. My last observation was made on February 7, 1927, when she again stated she was entirely well, did all her housework and used glasses only when doing fine sewing. Her apex beat was still in the mid-clavicular line, the impulse was normal, and blood pressure 210/110. Her eye grounds were normal. Her radial, brachial, and temporal arteries were soft.

The severe benign type is usually accompanied by the symptoms incident to what we designate as cardiovascular disease. Generalized arterial sclerosis with retinal changes, cerebral symptoms, and varying degrees of cardiac hypertrophy are manifest fairly early. Retinal hemorrhages, disturbances of the cerebral circulation, with transient aphasia,

mono- or hemiplegia, hemianopsia, and angina pectoris give evidence of these arterial changes.

Sooner or later evidences of decompensation appear, and, in a small percentage of cases, renal involvement that closely simulates, or is identical with, chronic interstitial nephritis. Cardiac dilatation, with decompensation, occurring in the course of hypertensive disease, does not appear to be largely a question of physics. Hypertension may exist over a long period of years, giving rise to moderate hypertrophy, but without decompensation. An example of this was cited above in the case of Mrs. S., whose hypertension had been present for twenty-four years without causing even discomfort. On the other hand, the coincidence of hypertension, arteriosclerosis, and the myocardial involvement which so frequently accompanies or follows infectious diseases, such as rheumatic and typhoid fevers, syphilis, influenza, or even the lowly acute infectious tonsillitis, is prone to result in early decompensation. In the opinion of the writer, an arterial system already in a condition of hypertension is far more vulnerable to infectious processes than is one in a state of normal tension. This opinion is based on the uniform occurrence of arterial sclerosis in all cases of hypertension, with the possible exception of the mild benign type, and the recession of the processes, frequently observed to follow removal of infectious foci.

It is remarkable how long, even after full development of the severe type of benign hypertension, the individual may continue his usual activities in comparative comfort. An example may be cited in the case of Mr. L. who, when thirty-nine years of age, in 1911, consulted me because of dimness of vision in his right eye. His weight was 290, his blood pressure 200/110, his heart hypertrophied, the apex beat being outside the nipple line, and his urine normal. The oculist to whom he was referred reported a retinal hemorrhage, the arteries in both grounds being like corkscrews. Though he could never be induced to change his habits in any way, he continued his work, which was arduous, until cerebral hemorrhage occurred in 1925, fourteen years later. Decompensation began in 1916, four years after my first observation, and he was kept digitalized until his death. During his last four years, his pressure varied between 260/140 and 290/160.

In 1924, Wagner and Keith, of Rochester, reported a study of thirteen cases, which they designated malignant hypertension. These patients were referred to their service with the diagnosis of acute glomerular nephritis. Their ages varied between twenty-four and thirty-nine, and the duration of noticeable symptoms, from a few months to three years. They were found to have diffuse vascular disease without renal involvement, and were accompanied by weakness, loss of weight, cerebral symptoms, and accidents, continued high blood pressure and very severe neuro-retinitis. In age incidence, history, and clinical and laboratory findings they conformed to the usual description of severe essential hypertension. The outstanding feature of them all was the severe hemorrhagie and exudative neuro-retinitis, accompanied by marked retinal arteriosclerosis. The determining factor in the production of the neuro-retinitis is not known, and, once established, it is but little influenced by treatment. If the patient survives long enough, the retinitis may subside, the effect on vision depending upon the amount of retinal and optic atrophy. One patient in this group died while under observation, and at autopsy there were found bilateral cerebral hemorrhage, moderate cardiac hypertrophy, and marked generalized arteriosclerosis.

Johnson and Adams report the occurrence of malignant hypertension in a girl of fifteen, in whom the findings were virtually identical with those described by Wagner and Keith.

A characteristic feature of all the reported cases of this type of the disease found in the literature has been the generalized arteriosclerosis with fixation of blood pressure. By "fixation" is meant that the pressure is very slightly, if at all, affected by the application of the usual means for its control, such as rest, nitrites, sedatives, hot baths or liver extract. When it occurs, it indicates arteriosclerosis, involving the splanchnic area. As a rule, it is a late occurrence in the benign type of hypertension, and the time of its appearance may be used as an index to the severity of the disease. In the malignant type it appears early.

Hirschfelder says: "An increase in blood pressure is indeed the rule in arteriosclerosis, although, as Hasenfeld has pointed out, it occurs only in persons whose sclerosis involves

the splanchnic arteries. Neither increase in blood pressure nor hypertrophy of the heart necessarily occurs in patients where these vessels are not involved". Bishop says that in arteriosclerosis, hypertension does not occur without involvement "below the diaphragm".

In an article describing the effect of liver extract on hypertension, Major cites the case of a man whose pressure did not respond to the extract, and who died while under observation. Autopsy disclosed intense arteriosclerosis of the splanchnic vessels.

While a consideration of essential hypertension is not supposed to include either arteriosclerosis or nephritis, clinically, it is almost impossible to avoid some mention of them. These two conditions with cardiac hypertrophy are the usual terminal results of the disease and their pathology is its only known pathology.

Christian says, "Very probably, these three conditions are often mingled in the same patient, and it is not possible, from autopsy evidence, to reconstruct the type, sequence, and progression of lesions".

Johnson and Adams, of Rochester, so frequently quoted in this paper, make use of the following routine in determining the type of hypertension:

First—The patient is kept in bed, as quiet and tranquil as possible, for three days.

Second—Sodium nitrite, gr. ½, is given every hour for six doses.

Third—Luminal, gr. ½, is given every hour for six doses.

Fourth—A bath at a temperature of 100° to 105° for fifteen minutes is given.

Each of these tests is given on different days, and each day frequent blood pressure readings are taken as an index to the response to each test. Eye ground and cardiac changes also are taken into account.

Fluctuation of blood pressure is the real criterion by which they are judged, which indicates that the severity and seriousness of the disease is determined largely by the extent of arteriosclerosis.

The termination of hypertensive disease, in the majority of cases, is by one of three catastrophies: heart failure, cerebral hemorrhage, or uremia.

Christian says that of 131 cases of high blood pressure occurring under his observation, 25 per cent died of cerebral accident, 32 per cent of cardiac failure, 4½ per cent of uremia and 25 per cent of something that had nothing to do with high blood pressure. Of thirty-six cases occurring under the writer's observation, in the past ten years:

15—(41 2/3%) died of cerebral accident.
3—(8 1/3%) died of cardiac failure (decompensation).
8—(22 2/9%) died of angina.
4—(11 1/9%) died of coronary occlusion.
4—(11 1/9%) died of uremia.
2—(5 5/9%) died of bronchopneumonia.

If these figures even approximately indicate the most frequent termination of hypertensive disease, they show that more than half of our patients having it will die as a direct result of arterial and myocardial degeneration.

If we bear in mind that their lives and safety depend upon its early recognition, and that, once established, the removal of every possible focus of infection may prevent or retard the development of myocardial disease or arteriosclerosis, we will have learned a primary lesson in the prevention of a great human catastrophe.

413-417 *Medical Arts Building.*

ALBUMINURIA IN RELATION TO DISEASE OF THE TONSILS—A FURTHER REPORT.*

By CLARENCE PORTER JONES, M. D., F. A. C. S., Newport News, Va.

Before a meeting of this Society which was held in the Spring of 1924, we reported nine cases as having been relieved of albuminuria by removing diseased tonsils, the only exception being a woman who had a small goitre to develop several months later, resulting in a return of albuminuria. After an operation for relief of this thyroid enlargement, however, the albuminuria disappeared and she has remained albumin free. All these nine cases occurred in the year 1923.

We now wish to report thirteen additional cases occurring during the year 1924, which we feel is of some value as a most intensive study was made in each case, and the fact that all happen to be alive and albumin free at this time, over two years having elapsed.

In our report made in 1924, we said: "It is quite commonly conceded by physicians that albuminuria may occur in almost any acute disease, especially in the exanthematous fevers

*Read before the Walter Reed Medical Society, at Yorktown, Va., May 26, 1927.

of childhood. Even frank nephritis is not an unusual complication of acute infections; in fact, it occurs quite frequently after scarlatina, diphtheria and other diseases. However, physicians have not, as a rule, given general recognition to the possibility of renal changes in nasopharyngeal infection, especially tonsillitis. In 1910, H. W. Loeb[1] directed special attention to the fact that acute nephritis is a frequent sequel of tonsillitis, although this is often overlooked by the majority of practitioners. He made a very careful study of the available literature at that time, recording Leydens's observation (1891) of the possibility of nephritis after angina, and Thouvenet's reported case (1894) of marked albuminuria ten days after the onset of acute lacunar tonsillitis. John Lovett Morse, Emil Mayer, Herrick, Friedrich, Mueller, Curschmann and numerous other authors had recognized the occurrence of nephritis after simple acute tonsillitis. Adler[2] has even recorded the statement that a form of nephritis occurs in at least seventy-five per cent of all cases of pure tonsillitis.

"With the inauguration of the intensive studies of focal infection in relation to systemic disorders the tonsils soon became the object of almost universal suspicion as probably the most common avenue of infection. Frank Billings[3] recognized clearly the etiologic relation of nasopharyngeal infections to arthritis and nephritis. This subject has been emphasized also by Shambaugh[4], who stressed particularly the possibility that tonsil stumps, however small, may be productive of nephritis and rheumatism. Smith and Bailey[5] reported three cases that demonstrate the close relationship between tonsillar and renal infections. In the presence of chronic disease of tonsils with acute nephritis or pyelonephritis, they recommend immediate tonsillectomy for the purpose of preventing permanent organic injury. Cautly[6] has cited two cases. One of his patients was observed for almost three years, after decapsulation of one kidney had been performed because of persistent albuminuria, anasarca and ascites. Subsequent transitory improvement was ascribed to the operation, but recurrence took place, with edema of the legs and massive albuminuria. This "flare-up" was ascribed to septic tonsils. Within a month after enucleation of the tonsils the albuminuria disappeared and the patient subsequently enjoyed good health. Bumpus and Meisser[7] report. "It is our custom to have tonsillectomy performed in all cases in which the urinary infection may be reasonably believed to be of focal origin. Since we have adopted this procedure, a surprisingly large number of apparently negative tonsils has been found to hide deep-seated virulent infections." Herman C. Bumpus[8] points out that the deeply buried tonsil is the most dangerous, as absorption from the crypts is easy; that the large tonsil, although infected, drains its noxious exudates and bacteria into the throat, which are swallowed to bathe the gastric and intestinal mucosa. We had the benefit of careful laboratory studies, including urinalysis, in every case of tonsillitis in a large series, in adults as well as children. Immediately after an attack of acute tonsillitis, albumin was found in over forty per cent of our cases, albumin and pus cells in more than twenty-five per cent, and albumin, pus cells and casts in over five per cent. In the last class of cases, there was always a history of more than one previous attack. If tests for albuminuria or for evidences of hematuria were made systematically by laryngologists in every case of tonsillar infection, it is more than probable that Adler's statement that renal damage occurs in seventy-five per cent of all cases will not prove an exaggeration.

The Silent Tonsil

The mere presence of the tonsils may often be considered a determining cause of renal involvement in nasopharyngeal infection. Because of their general structure, their crypts and recesses, the tonsils offer an excellent refuge for pathogenic micro-organisms. Undoubtedly the tonsillar and other lymphoid tissue of the pharynx plays a defensive role against local and general infection, but it has been definitely proved also that it serves as a portal of entry for systemic invasion by virulent bacteria. The etiologic relationship of the tonsils to renal disease, including nephritis and pyelonephritis,

1. Loeb, H. W.: Acute Nephritis Following Acute Tonsillitis. Trans. Amer. L., R., and O. Soc., 1910; also Jour. A. M. A., Nov. 12, 1910.
2. Adler, L.: Remarks on Some General Infections Through the Tonsils. N. Y. Med. Jour., March 31, 1906.—Quoted from Loeb.
3. Billings, Frank: Chronic Focal Infections and Their Etiologic Relation to Arthritis and Nephritis. Arch. Int. Med., 1912.
4. Shambaugh, G. E.: Trans. Amer. Rhinol. Assn., 1913.
5. Smith, D. L., and Bailey, W.: Arch. Pediat., Aug., 1923.
6. Cautly, E.: The Kidneys and Tonsillar Infections, Arch. Pediat., Feb. 1923.
7. Bumpus, Herman C., Jr., and Meisser, John G.: Foci of Infection in Cases of Pyelonephritis. Jour. A. M. A., Nov. 2, 1921.
8. Bumpus, Herman C., Jr.: Certain Aspects of Focal Infections Commonly Misunderstood. Med. Jour. and Rec., April 2, 1924.

need not necessarily be evidenced by tonsillar hypertrophy. If diseased, any tonsil or tonsillar remnant, no matter how small, may provoke systemic complications that lead to renal changes. In the final analysis, the kidneys are primarily excretory organs, serving as filters for inorganic salts as well as organic detritus, including bacterial products. The patients often have a septic appearance, are in a general run down condition, and often complain of stiffness in the neck during deglutition. There is usually some enlargement of the sentinel gland. Inspection of the pharynx, discloses that the anterior pillar is darker in color than the other pharyngeal structures and is firmly adherent to the tonsil. The surface of the tonsil is more or less smooth, the crypt mouths being very small and difficult to locate. The crypts contain considerable retained secretion under pressure. The tonsil is light in color, for its surface is bathed in a white filmy substance like very thick saliva. To such a tonsil in our former report, we assigned a name "Silent Tonsil." We see no reason to change the nomenclature. In the presence of this tonsillar finding, experience has demonstrated that we can confidently anticipate discovering albuminuria.

The thirteen cases we report occurred in our clinic at the National Soldiers Home, Southern Branch. Twelve are World War Soldiers, and one a woman, aged twenty-nine years. We are deeply indebted to Doctors Shillinger, Eames, Cullinan, Erwin, Newman, Woodward, and also to Miss Louise Brown, the laboratory technician. Each case had had no history of acute tonsillitis of any severity, but had had persistent albuminuria for at least four months. Each patient went through the same routine of intensive study, having been examined by men who are most competent in their respective fields, internist, neuro-psychiatrist, cardiologist, genito-urinologist, surgeon, roentgenologist, etc. A complete laboratory examination, including for malaria, blood sugar and Wassermann, had also been made, as well as complete X-ray studies with particular reference to teeth and nasal sinuses. Also, in the study of these patients there was an eye single for any suspicion of gall-bladder or any gastro-intestinal disorder. If there remained in the minds of any of these examiners any suspicion of any additional focus, the case was ruled out. This series would have been very much longer had not such expressions as "suspicious tooth," "shadowy antrum," "heart murmur", "possibly an infected prostate", "doubtful appendix", etc., been made in reports by these examiners. Therefore, in common parlance, these cases "came clean" or as nearly so as it was humanly possible to have them. The urinalysis showed albumin in all cases, pus cells in seven cases, white blood cells in considerable number in four cases, and casts in three cases. After tonsillectomy the urine was examined daily for one week, then every third or fourth day until albumin free urine was found at two more examinations, then again in thirty days. The urine was albumin free, remaining so, in four days in one case, nine daye in one case, ten days in one case, eleven days in one case, twelve days in four cases, thirteen days in one case, fourteen days in one case, sixteen days in one case, eighteen days in one case, and twenty-two days in one case. Each case is well and has had an urinalysis within a year, which proved albumin free.

These "silent tonsil" cases were all submitted to tonsillectomy. In each case, the general preoperative procedure was identical. The patient was kept in bed for from two to five days, on a light diet with plenty of water and other fluids. On the day of operation, thirty minutes before administration of ether, the patient received a hypodermic injection of morphin, 1/8 to 1/4 grain, with atropin, 1/150 grain. The tonsils were enucleated without undue haste, extreme care being exercised to remove every vestige of the tonsils, including any subtonsillar lymphoid tissue, and all adenoid vegetations. After the operation, the patient was kept in bed for from three to seven days. During this time the urine was examined daily, and an able internist co-operated in attending to the cases. The albuminuria disappeared completely in from four to twenty-two days, and repeated examinations in every case have failed to disclose recurrence of the urinary symptoms. So far as general physical improvement and cure of albuminuria are concerned, the results have been perfect in all patients.

Conclusions

1. Routine tests will disclose the presence of albuminuria or other evidences of nephritis in the majority of cases of acute tonsillitis or other tonsillar infections.

2. In cases of albuminuria of doubtful origin, careful examination of the pharynx may

often determine the etiologic relationship of diseased tonsils.

3. Hypertrophy or severe inflammation of the tonsils is not necessarily an index of the etiologic relationship of the pharyngeal lymphoid tissue to renal involvement. Even small tonsils or a mild attack of tonsillitis may provoke marked nephritis.

4. Thorough enucleation of the tonsils, including the subtonsillar lymphoid tissue and adenoid vegetations, assures the prompt cure and prevents the recurrence of the related albuminuria.

3117 *West Avenue.*

SOME REMARKS ON THE TREATMENT OF INFECTIONS AND INJURIES OF THE EXTREMITIES WITH SPECIAL REFERENCE TO THE USE OF PHYSIOLOGICAL SALT SOLUTION.*

By RAY A. MOORE, M. D., Phenix, Va.

It is with some hesitation that I advocate a procedure so simple in application and so obviously indicated from the nature of the case that it may be already a routine and general method of practice.

However, I am emboldened to bring this matter to your attention for several reasons: first, it may have been overlooked on account of its very simplicity, for it is a trait of human nature to neglect the simple though efficacious means to an end while looking for the more spectacular though it may be the less effective; second, I want to emphasize the importance of attention to some of the smaller details in the treatment of this condition. Attention to detail is an important thing, often overlooked anyway, and especially too often overlooked in the treatment of infections and minor injuries of the extremities; third, it suggests and involves a review of the pathology of inflammation and the physiology of regeneration—a biologic study that is always profitable to us. And finally, an experience of eighteen years in which I have used this method as a routine has convinced me of its usefulness.

The treatment consists in immersing the part in physiological salt solution—9 parts sodium chloride to 1,000 parts of distilled water, or, for practical purposes, one drachm of salt to one pint of boiled water. The solution should be as hot as can be borne in treating an infection and a little above body temperature when used to aid regeneration and repair. This soaking is kept up from twenty to thirty minutes with the part in a dependent position. Then it is elevated at an angle of approximately 45° and massaged gently downward for the same length of time. Then the dressing is applied and the part kept slightly elevated. This should be done twice in the twenty-four hours in mild cases and four to six times in severe infections.

At first glance, this procedure may seem merely a means of producing hyperemia. This alone would make it worthy of consideration, for, as Horsley says (Operative Surgery, Page 30), "Hyperemia is connected in one way or another with all surgical questions whether they concern treatment of inflammation or repair of a wound." But a study of the question will show that this is not its only advantage.

This treatment is wholly applicable only to infections and injuries of the extremities, but when we consider the proportions of such injuries here to other parts of the body, the treatment is not so much limited after all. But before proceeding further, I shall report a few illustrative cases.

Case I. Farmer, aged 30. Gave history of having jumped from a moving passenger train three days previously, falling and splitting the palm of his hand wide open. The wound had been sutured and bandaged tight and untouched until I saw it. The hand and the forearm were in a strut, pitting on pressure as far as the elbow. His temperature was 103, and pulse 110, and the picture that of the onset of a severe infection. There was a yellow exudate but no pus from the wound which gaped between the sutures. I cut the sutures, allowing the wound freer drainage (though it was draining very well at the time), and immersed his arm in a hot normal salt solution, gently massaging downward and adding hot water and salt as necessary, until his hand and arm looked shrivelled. I probably kept this up for an hour or more as it caused such relief from the pain and such a noticeable disappearance of the edema. I then dried the arm by stroking from the hand towards the elbow, and elevated it. I figured that the heat, and the solvent and cleansing power of the saline solution had gotten rid

*President's address before the South Piedmont Medical Society, November, 1924.

of most of the poison then formed, and next I wanted to scatter the remnant out through the system where there would be no locality of deadly activity from the infection, because the phagocytic cells, finding the enemy well scattered, could easily overcome them. This was about 5 P. M. The case looked so bad that I did not allow the man to go home, but had him repeat this soaking, as above, again that night and the next morning, when the picture was an entirely different one. The hand and arm were nearly normal in size, there was no pitting on pressure, except a little on the back of the hand, temperature practically normal, and the patient perfectly comfortable. The treatment was kept up twice a day until the wound had healed. Of course, I do not mean to claim that the use of the salt solution was entirely responsible for the results, but simply that it had an important part in it. Other details in the treatment of this case were, in brief: cutting the sutures, removing the tight dressing, keeping clean dressings applied, giving the patient a brisk cathartic, attention to diet, etc.

The case reported illustrates the greater number of cases seen by the general practitioner, and the procedure used can be applied equally well whether it is an open or a closed wound. This report also illustrates cases where the patient's resistance is good, and where pus readily forms and is easily evacuated. The treatment under discussion is very useful in such cases, but it is much more useful and well nigh indispensable in those cases of inflammation where you have the swelling and edema with little or no pus formation. I want partially to report a case to illustrate that condition.

Case II. Farmer, aged 54, came to my office the morning of May 17, 1924, stating that he had been bitten at 5 P. M. the day before by a "copper head," both fangs of the snake passing through the index finger of his right hand. Hand and arm were swollen and edematous, and the bitten finger purple. Since midnight he had been suffering agonizing pain all over the body and especially in the axilla of that side. He had "just walked the floor all night", as he expressed it. He was so weak and nauseated (shocked) that I had to put him to bed until late in the afternoon, before he was able to go home. I used hot saline and hot permanganate of potash solutions alternately that day, the latter seeming to give more relief from pain. I heated him up, gave him whiskey, strychnine and other symptomatic treatment, as indicated, and administered anti-streptococcic vaccine. The condition cleared up very well in a week or ten days, except that the finger turned black and looked like it was going to slough off. We continued the use of the saline soakings three or four times a day, as already described. After ten days or two weeks the ball of the finger sloughed off, leaving the bone exposed in front, but the back of the finger intact, though still dark, giving the finger somewhat the appearance of a hawk's bill. By this time I had taught the man the use of the saline solution and of protective dressings, so I told him to keep them up and had him report occasionally. It was remarkable how rapidly the finger filled in. I saw the patient about a week ago. He had a complete finger, plus a little projection in front of the nail. I believe that this treatment—heat, salt solution, changing positions, etc., persisted in as it was, saved that man a finger. I might add here that he lost only about ten days from his work.

I want to report one other case which illustrates a type of cases in which this treatment is especially applicable.

Case III. R. W., girl, aged 12. Saw her about an hour after she had cut through the last phalangeal joint of index finger of right hand, completely severing the finger and leaving it swinging by a narrow piece of skin on the inner lateral aspect of the finger. The end of the finger was cold and apparently lifeless. I soaked that hand (and finger) in warm saline solution for an hour before suturing it back in place. In dressing it I first ran a strip of rubber mesh over the end of the finger and strapped it to the finger with adhesive above the injury in such a way as to hold the cut-off finger in place and yet not prevent free access to it. Next a thin layer of gauze was loosely applied and that finger immobilized with a splint. In this way the stimulus for the lymph is provided with the gauze, while the rubber or parawax prevents its attachment and thereby saves the tearing away of the granulating cells. This much of the dressing was allowed to remain until some union had taken place, the dressings down to this being removed for treatment. For four

or five days I used the saline soakings once a day and had the patient keep the dressing wet with saline during the interim. Hot water bags continuously applied kept up heat in the part until the circulation was re-established. The severed part of this finger sloughed off very much like that of Case II, but regeneration was much more rapid. Recovery was complete.

This case illustrates some very important details in the treatment of infections and injuries of the extremities. It is perfectly wonderful to see what nature will do in the way of repair if you, by a careful application of biologic principles, first see that she is not obstructed or interfered with, and, in the second place, assist here in any way you can. Protective dressings may be used in such a way as to stimulate lymph (the layer of gauze), prevent granulations from being destroyed (parawax, rubber mesh, etc.) and to a large extent do away with discomfort. Air and sunshine are very helpful. I often use some form of muzzle with one thickness of gauze or wire mesh which does not keep out sunlight and air. Again, I sometimes have the patient hold the part in the sunlight with all dressings removed. This is very useful when the wound drains too freely because of friction from the dressings. Variety furnishes a stimulus here, as elsewhere.

Summary

In concluding, let us keep in mind the fact that we are discussing, as an entity, heat, physiological salt solution and the utilization of the laws of gravitation. You might ask, why not use some other drug in the place of sodium chloride. The advantages of natural salt solution are, briefly: it is always available, it is cheap, is non-toxic, is a solution practically isotonic with the blood, is as good as any antiseptic we have, and at the same time does not injure tissue.

Modus Operandi:

(a) Relieves pain by relieving the tension in the tissues.

(b) Furnishes heat—directly (the hot saline) and indirectly (the rush of blood to the part).

(c) Stimulates resistance by bringing a fresh blood supply to the part (blood is the enemy of bacteria), by increasing leukocytosis and by decreasing relative number of invaders to defenders.

(d) Supports the general and local circulation by promoting and increasing the circulation of blood and lymph through the part.

(e) Encourages elimination, as above explained, by increasing the direct evacuation of pus, and by enhancing the resistant power of the part.

(f) Encourages and aids regeneration and repair by furnishing nourishment from without as well as from within, by clearing away excess material that might promote the growth of bacteria, by cleansing the granulation surfaces without inhibiting the growth of new cells, or destroying them.

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ACUTE EAR CONDITIONS IN GENERAL PRACTICE.*

By H. D. GILMER, M. D., Hagerstown, Md.

When your president invited me to appear before your Society, he stipulated that I could present a subject of my own choosing. Naturally, I chose something in keeping with my own line of work.

I understand that you have a very full program today so I will try to come quickly to the point and not tire you.

My intention is to give you a short practical talk, something that may be of assistance to you in your every-day work, rather than tire you with technicalities and statistics.

I am glad that I was once a country doctor, and I know their short-comings as well as their virtues. In general practice I had experience that I could not have gotten elsewhere and that experience has been very valuable to me in my special work. In fact, I believe every man taking up special work should have had some experience in general practice, for so much depends upon the general condition of the patient.

I want to talk to you today in regard to "Acute Ear Conditions in General Practice," and, to do this more clearly it might be well to consider briefly the anatomy of the ear.

The ear is divided for study into three parts, the external ear, middle ear and internal ear. The large expanded part, or pinna, and the external auditory canal comprise the external ear. The external auditory canal is about an inch and a quarter long and extends forward and inward to the membrana tympani, or ear

*Read by invitation before the Warren, Rappahannock and Page Medical Society, in Front Royal, Va., April 19, 1927.

drum. A normal ear drum is pearly and translucent, with a triangular bright spot, known as the reflex cone of light.

The middle ear is a small cavity located between the membrana tympani and internal ear, and contains the small ossicles, the malleus, incus and stapes. These small bones form a chain, and transmit the sound vibrations from the drum to the oval window in the internal ear. The middle ear has two openings, the Eustachian tube and the aditus ad antrum. The Eustachian tube gives ventilation and drainage to the middle ear and equalizes the atmospheric pressure. This is often interfered with by enlarged tonsils and adenoids. The upper part of the middle ear is known as the attic, and from this there is a small opening, the aditus ad antrum, leading to the mastoid antrum. The mastoid antrum is the largest of the mastoid cells, is situated above and behind the external auditory canal, and communicates with other numerous cells scattered throughout the mastoid bone. These cells are all lined with mucous membrane, as in the middle ear. This will show you that any infection of the naso-pharynx may easily travel up the Eustachian tube to the middle ear and into the mastoid cells.

The internal ear, or labyrinth, contains the vestibule, semi-circular canals and organ of Corti, the essential organ of hearing.

Every general practioner should be able to look into an ear and get a fairly good idea of the condition there in. With the electric otoscope or reflected light, it is quite easy to look into an ear. Take every opportunity you have to look in ears and you will soon be able to distinguish between the normal and abnormal. Your first experience will probably be with cerumen, or ear wax. Provide yourself with a good ear syringe and it will be one of your best investments. With this and warm water the wax may be easily removed unless it has become hardened and dry; then you have a different proposition. If you do not succeed after a reasonable effort, have the patient use peroxide or glycerine for a day or two and come back for another trial. After you think you have it all out, look into the ear to be sure; then dry the ear of water before you let him go. Do not attempt to remove wax with a spoon or probe, as you will be apt to cause pain and injure the canal wall.

A patient will often come to you in great alarm and for urgent relief; a bug or fly has gotten into the ear. Pour in a little sweet oil and in a few minutes you can syringe it out. In syringing out ears be careful of the temperature of the water; if too hot or too cold the patient will become dizzy. The water should be just comfortable to the touch.

Most any foreign substance may be washed from the ear unless it is a grain of corn or bean which has become swollen or wedged.

Furunculosis of the external auditory canal is a condition you will see quite frequently. The patient will complain of much pain in the side of head and in movement of the auricle. This is a diagnostic sign between furunculosis and mastoiditis. In mastoiditis the pain is behind the ear and occipital. Patients with chronic discharging ears are prone to have furunculosis of the canals; it may also be caused by patient scratching ears after scratching hairy parts of body. Paint the canal with 5 per cent nitrate of silver and if the furuncle points, open it, but be careful not to make a deep incision or you may cause a perichondritis. Sometimes the furuncles will be quite persistent, one coming after another. In that case, I find the mixed vaccines very effective. The acne sero-bacterines answer the purpose very well.

The most important and most serious conditions you will meet with are the acute middle ear disease, for the reason that they are so often neglected and mean so much to the patient. Acute otitis media is rarely a disease *per se*, but is most usually a complication of some infection of the throat or post-nasal space. Why? Because you have an open channel, the Eustachian tube, forming a direct communication with the middle ear.

The most *common causes* are the acute infectious diseases, grippe, measles, scarlet fever, pneumonia, acute tonsillitis and sinus diseases. Contributory or predisposing causes are enlarged tonsils and adenoids and deflected nasal septi. Ordinarily the ciliated epithelium of the Eustachian tube will carry off the secretions, but when the tube becomes swollen or blocked by large adenoids the secretions are dammed back up into the middle ear.

Symptoms.—The first symptom is usually earache, slight rise of temperature and slight deafness. In children the only sign you may have is restlessness and crying. If the ear is examined at this time, the drum will be found reddened with small vessels extending across from the margin.

Some cases will only advance to this stage and then clear up. If there is no improvement in the next few days, there will be increased deafness and the drum will be found bulging, the reflex cone of light absent, and all landmarks lost. If allowed to go on, it will open and discharge on its own accord, but in the meantime the infection may travel back into the mastoid cells and you will have a mastoiditis.

A bulging inflamed ear-drum should invariably be incised at once. Failure to do so may mean mastoiditis and complications such as lateral sinus thrombosis and meningitis, possibly brain abscess.

The symptoms of mastoiditis, in the beginning, are the same as acute otitis media with added tenderness and redness behind the ear and occipital headache. In young children the mastoid cells are not developed and the mastoid antrum only is involved. The cortex is thin and often the pus will break through and cause a peri-ostitis and sub-periosteal abscess. This will cause the ear to stand out very noticeably from the side of the head.

Treatment.—The patient should be put to bed, given a cathartic and, if necessary, an opiate. Ten per cent carbolic acid in glycerine should be instilled in the ear every three hours; sometimes this will suffice. If the drum bulges, it should be incised, but it is not necessary to incise all inflamed ear drums, as this is often a part of the general inflammation of the naso-pharynx.

I cannot urge you too strongly to always examine the ears of children who have an acute infectious disease. You will be well rewarded and often surprised that you have overlooked an inflamed ear. For instance, in a case of pneumonia, the temperature may come back to normal and in a few days have a slight rise. It may be caused by a middle ear condition, and suppose you do not examine the ears? On your next visit the mother may tell you that the child is much better; that during the night it went to sleep and the next morning the ear was discharging.

To continue with the treatment:—When an ear starts to discharge, it should be irrigated with warm boric solution every three or four hours, depending upon the amount of flow. After cleansing, instill your glycerine and carbolic mixture. After the discharge lessens, you may use mercurochrome, 2 per cent, or other antiseptic solution until discharge ceases. If a stringy mucous discharge persists, it is probably due to adenoids, and they should be removed. If a thick purulent discharge persists more than ten days, you will think seriously of a mastoiditis, and this usually means an operation, opening and draining the mastoid cells. The majority of cases of chronic running ears are due to an untreated mastoiditis. The mastoid should be operated, not only for the cure of the disease, but for the preservation of the hearing. The simple mastoid operation is conservative and comparatively safe. The failure to operate at the proper time may mean a chronic discharging ear, or possibly dangerous complications—lateral sinus thrombosis and meningitis. Most of the brain abscesses are of otitis origin, coming from a chronic mastoiditis. In practically every case of chronic middle ear infection the mastoid cells are involved. A person with chronic middle ear disease has been likened to carrying around a stick of dynamite,—you never know when it will explode.

The laity, as a rule, do not look upon a discharging ear as a serious condition, but will come for treatment on account of the foul odor or inconvenience of the discharge, not knowing the grave danger to which they are being subjected.

Lastly, and in conclusion, allow me briefly to summarize:

1. In syringing ears, be careful of the temperature of the water; if too hot or too cold, you will cause the patient to become dizzy.
2. Be sure to examine the ears of all children with acute infectious diseases.
3. A bulging ear-drum should be incised at once; failure to do so may mean a mastoiditis.
4. A thick purulent discharge continuing for more than ten days is strongly suggestive of mastoiditis.
5. The simple mastoid operation is conservative and comparatively safe.
6. The failure to operate at the proper time may mean a chronic running ear.

OBSERVATIONS ON A CASE OF PITUITARY TUMOR WITH UNILATERAL QUADRANT HEMIANOPSIA.*

By FRANCIS G. SPEIDEL, M. D., Washington, D. C.

Of all intracranial tumors, those of the hypophysis most frequently induce visual dis-

*Read before the section on Ophthalmology and Oto-laryngology, Medical Society of the District of Columbia, April 15, 1927.

turbances, on account of the intimate anatomical relations existing between the pituitary gland and the optic structures. Visual impairment is usually progressive, depending on the type of growth, its relation to the optic chiasm, nerves or tracts, and its rapidity of growth. A large proportion of patients suffering from this condition seek medical aid primarily on account of failing vision. Frazier[1] states that of a series of 100 cases, failing vision in eighty-seven patients was the outstanding indication for treatment; that atrophy of varying degrees had occurred in forty-one, and in half of these there was total blindness in one eye, with deterioration of vision in the other eye.

Serious visual defects may be present, unknown to the patient; the writer has observed one such case in which one eye retained fair vision, but the other eye was totally blind, unknown to the patient. Various defects have been described as being associated with this condition, such as lowered visual acuity; defects in the visual fields, especially hemianopsias; the classic bitemporal hemianopsia; alterations in the fields for colors; scotomata, central and paracentral; and alteration in the color of the nerve heads.

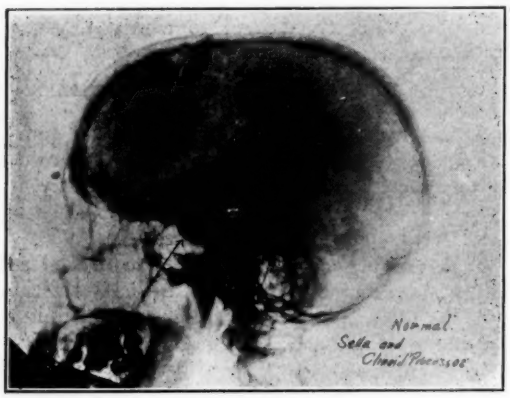

Fig. 1.—Normal Sella and Clinoid Processes.

The roentgenographic examination of the sella turcica is an important diagnostic procedure. Camp[2] states that "by virtue of its location, a pituitary tumor is unable to produce an increase of intracranial pressure until it has reached considerable size; consequently, the presence of a uniform circular enlargement of the sella, with thinning of the dorsum sellae and erosion and distention of the floor, without evidence of intracranial pressure changes in the rest of the skull, except in very advanced cases, is quite indicative of intrasellar tumor." This observation may account for the relative infrequency of choked disc, but, as enlargement of the growth occurs at the expense of contiguous structures, we have the explanation of the constant visual disturbances associated with this type of intracranial tumor. Dr. Dandy[3] has made the observation that the X-ray is of greater value in the diagnosis of pituitary or suprasellar tumors than any other intracranial new growths.

Deterioration of central or peripheral vision, with negative, or nearly negative, ophthalmoscopic findings, is not unusual, the visual disturbances being out of all proportion to any recognizable pathologic conditions in the fundi. Benedict[4] has very aptly noted that in other

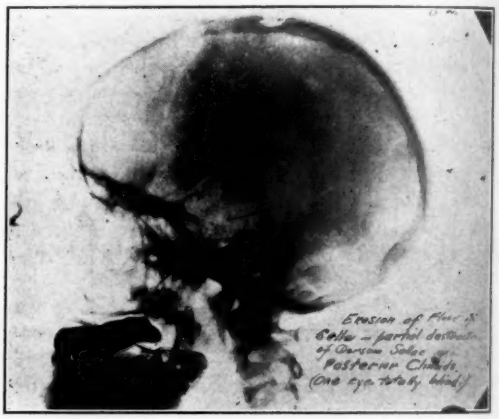

Fig. 2.—Erosion of Floor of Sella—Partial Destruction of Dorsum Sellae and Posterior Clinoids. (One eye totally blind.)

forms of atrophy, such as that associated with tabes, the atrophy is shown by pallor and excavation of the nerve heads, and vision is often better than would be suspected from ophthalmoscopic examination alone, while in lesions due to pressure at the chiasmal region, the nerve heads may remain unchanged for months or years, and at a late period a yellowish, waxy pallor occurs without shrinkage or loss of substance; at a still later period true atrophy may occur.

Dandy[5] in connection with his work on ventriculography has noted that occasionally the air injection causes latent field defects to become manifest; this occurred in the case to be reported.

Report of Case

Mr. S., aged 52, salesman, came under ob-

servation September 5, 1925, complaining of vertigo; onset about one year previously; several years before he had had attacks of headache. Had never had any nausea or vomiting, and had never been conscious of any visual disturbances. The neurological examination indicated the probability of an intracranial tumor,

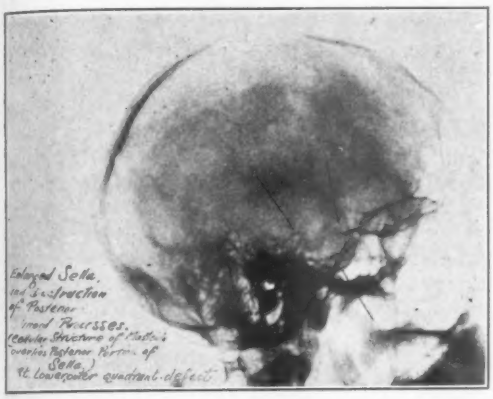

Fig. 3.—Enlarged Sella and Destruction of Posterior Clinoid Processes. (Cellular Structure of Mastoids Overlies Posterior Portion of Sella). Rt. Lower, outer Quadrant Defect.

and a roentgenogram of the head indicated enlargement of the sella turcica, with destruction of the posterior clinoid processes (Fig. 3).

Vision, each eye, 20/30. Tracings of the visual fields revealed an absolute right lower outer quadrant hemianopic defect (Fig. 5). The ophthalmoscopic appearance of the nerve heads seemed to be normal, neither atrophy nor elevation being present in either. At this time, the patient was advised of the probable necessity of an operation. He decided to go to Johns Hopkins Hospital for surgical treat-

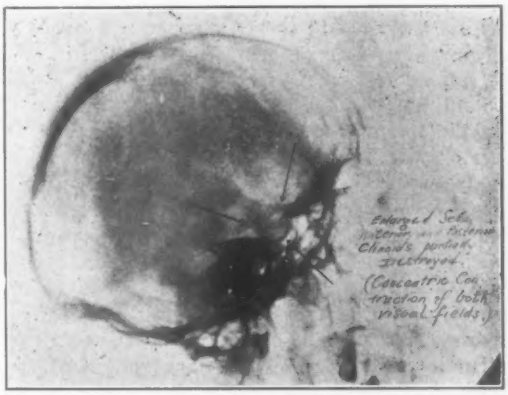

Fig. 4.—Enlarged Sella Anterior and Posterior Clinoids Partially Destroyed. (Concentric Contraction of both Visal Fields.)

ment, and the following abstract is from the records of that institution:

A complete and exhaustive neurological examination was made, which, however, failed to reveal any definite localizing signs. Roentgenograms showed excavation of the floor of the sella turcica, with destruction of the posterior clinoids. The eye grounds were reported as being normal. Further studies of the visual fields were undertaken; tested by different examiners, or at different times by the same examiner. There were variations in the findings, the right eye showing at times an hemianopsia. The visual field tracings showed the lower

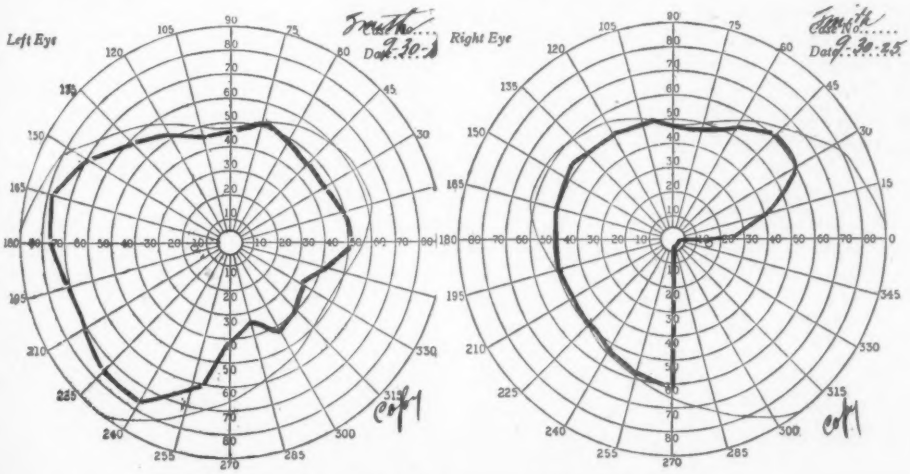

Fig. 5.—Right quadrant hemianopsia; pituitary tumor.

outer quadrant of the right eye missing. Following the injection of air into the ventricles for purposes of ventriculography, a complete right homonymous hemianopsia developed, which persisted to the time of the operation.

November 7, 1925, operation was performed. A tumor originating from the hypophysis was found, but this had extended beyond the limits of the sella, upward toward the base of the brain and rather far posteriorly; an aneurysmal dilatation of the left internal carotid was exerting pressure on the left optic nerve; although only a partial resection of the tumor was done, there was profuse hemorrhage and shock, and the patient failed to survive the operation. Post-mortem examination revealed a tremendous tumor of the pituitary, with destruction of adjacent bone, compression of the basilar artery, and with an extension into the pons.

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Rochambeau Apartments.

JOHN CULLEN.

By WYNDHAM B. BLANTON, M. D., Richmond, Va.

The calibre of many of the men who composed the medical profession of Richmond one hundred years ago was exceptional. Their education and training, their habits and accomplishments arouse our admiration. Foremost among the physicians of that day was John Cullen.

Cullen was born on February 1, 1797, in the city of Dublin, Ireland. There he grew up, and was educated. His training was completed at Trinity College. Napoleon had meanwhile remade the map of Europe and centered in Paris much of the art and intelligence of the world. Young Cullen at the age of 17 went to Paris to further prosecute his studies. On one occasion he felt the iron hand of the Emperor. His uncle lived in Salamanca, Spain. The nephew set out to visit him, but was arrested and brought back to Paris. He was fortunate in being set at liberty. He made the most of his time now studying French, anatomy and surgery. It was a transition period in medicine in Paris. As an American student wrote "They were always telling of Hippocrates, Galen, Celsus, etc., as if not a particle had been added to the stock of knowledge since their time". Broussais' supremacy was just beginning to be shaken. "Observation and method" were displacing theory and speculation. Corvirsart, Napoleon's physician, had done a great service, in translating the *Inventum Novum* (1808). Laennec was busy with his clinico-pathological studies, but it was not until the year after Cullen left Paris that the inspiration of the stethoscope came to him; and his great work on auscultation did not appear for three years more. After the collapse of Napoleon, June, 1815, Cullen went back to England. As a matter of fact he took passage on the same ship with the allied sovereigns.

It was New York, not Ireland, that now attracted him. So he set sail again and landed in America. The young son of Erin found employment as a chemist working with what was considered in that day a large manufacturing company. His interest in this science stretched back to his student days and later on we find him lecturing on chemistry in Petersburg, Va. For a career, however, he had determined on medicine, and shortly made his way to Philadelphia where he began study in the University of Pennsylvania. Among the faculty at this time were Philip S. Physick and John Syng Dorsey. Dr. Dorsey became very fond of young Cullen and took him as his private pupil. It is said that but for the death of Dr. Dorsey in 1818 they would have been associated in practice. As a tribute to this affectionate relationship years after, Dr. Cullen named a son, John Syng Dorsey. After graduation he served in the "Almshouse" as one of the resident physicians.

About 1820 Cullen made a trip to Virginia. Shields says the object of this visit was to confer with Mr. Jefferson about a position at the University of Virginia. But for the intervention of sickness he might have joined Dunglison on the faculty there. It appears he at first went to Petersburg on the invitation of his friend Dr. Robertson to lecture on chemistry. On his way through Richmond one of those fevers about which Bartlett wrote, and which were so common at the time, laid him low. He never reached Charlottesville. On his recovery, his new made friends had no difficulty in persuading him that after all the capi-

tal of Virginia offered splendid opportunities for a young man of his training in medicine. Richmond was then a city of only 6,000 whites but was enjoying the peace and prosperity that followed the Revolution. Soon after Cullen's arrival came Lafayette on a rainy October day, and not long after this the great Constitutional

From the original silhouette of John Cullen, in possession of Dr. Joseph L. Miller.

Convention was held on Academy square near the site of the present old Medical College building—a building for which Cullen himself was to be largely responsible. The two famous parsons, Blair and Buchanan, died soon after his arrival.

The young Irishman, now twenty-three or four, was a fine specimen of manhood, standing six feet, with a full red face, blue eyes and dark brown hair. He dressed superbly in the style of the times—high hat, long tail frock, velvet vest, silk scarf, and dark pants. In the early days of his practice he went on horseback. In later years he was to be seen, often with his two boys, riding in a closed carriage behind two fine roans.

He rapidly acquired a large practice in Richmond. His business methods were in advance of his time. He employed a full time male secretary. He built a large house on the corner of Ross and Governor streets, overlooking the Capitol Square, with commodious offices on the first floor. This house later became the original St. Luke's hosptial. It has since been razed and the Richmond Press stands on the site.

In 1838 Dr. Cullen was one of the group of five who planned and organized in Richmond its first medical school as the Medical Department of Hampden-Sidney College. He occupied and ornamented the chair of the Practice of Medicine until his death. He shared in the struggles of the young institution against poverty and political opposition. The school grew and moved into a fine new structure in Academy Square in 1845. He was active in the fight of 1854 which involved the whole state and which ultimately gave his institution a new and independent charter. He was a founder of the Medical College of Virginia and the distinguished first professor of medicine.

From a portrait of John Cullen, in possession of Dr. Leigh, of Danville, Va.

Dr. Cullen enjoyed the reputation of being an orator. His teaching was primarily from the rostrum, though he met and instructed students at the bedside in the college infirmary which was often crowded with typhoid fever. He held his listeners by his fluent and rich Irish brogue, punctuated with a rare admix-

ture of wit and satire. The gold snuff box was always in evidence and the lecture was never underway until he had gracefully taken snuff before the class. Dr. Cullen's contributions to medical literature must have been few, if any. Search through the current journals of the time failed to disclose his name. There are several bound manuscripts in the library of the College of Physicians of Philadelphia which were recently a gift from the descendants of Dr. Cullen. They were given to this library because Dr. Cullen got his medical education in Philadelphia, and were thought by the donors to be his lecture notes. However, they bear the name of William Cullen, and are now considered by the librarian of the College of Physicians to be notes taken from the lectures of the great Edinburgh physician. But there is no record of John Cullen having studied in Edinburgh.

Among the interesting things the late Dr. Charles Shields relates in a paper about Dr.

John Cullen's Tomb, Hollywood Cemetery.

Cullen, under whom he studied, are the details of his treatment of certain common diseases. They reveal in a charming, sometimes shocking, way the therapeutics of the last century. He was described as a bold therapeutist, when the lancet was part of the armamentarium of every physician and Rush had so popularized the use of calomel as to call it the Sampson of Medicine. Shields recalls a case of tetanus cured by Dr. Cullen's lancet. Acute pleurisy he first bled—bled as did others until syncope intervened. Four grains of opium were then administered and, if pain was a prominent feature, a blister was applied. For mumps he gave a large dose of calomel, followed by a Seidlitz powder every four hours. If severe purging then became alarming, four grains of opium turned the scales in the other direction. His treatment of delirium tremens appears to have been heroic and was as follows: Calomel Gr. xx, Ext. Colocynth Comp. Gr. x, and Croton oil mxii, followed by a saline purge, and then opium, if the patient did not sleep, obeying the popular dictum "that the patient must sleep or he will die".

After thirty years of incessant work and practice, Cullen became ill. He sought advice in Philadelphia. His disease was pronounced softening of the brain. He demanded to be bled, but his favorite knife could not stem the course of his malady. He died in the 52nd year of his life. He was a genial, gentle and approachable man.

In Hollywood Cemetery, amid the ivy, oaks and magnolias, on a high eminence, stands a tall granite shaft with this simple inscription:

JOHN CULLEN, M. D.
BORN IN THE CITY OF DUBLIN,
IRELAND,
FEBRUARY 1, 1797.
DIED DECEMBER 25, 1849.

NON-SPECIFIC PULMONARY INFECTIONS WITH CHRONIC SINUSITIS AS AN ETIOLOGICAL FACTOR.*

By GRANT PRESTON, M. D., Harrisonburg, Va.

From a review of the literature, it seems that prior to 1918 little attention was given to the study of non-specific lung infections. Whether this seeming indifference on the part of the profession to an important malady was due to failure of our methods of diagnosis or to a dearth of material, I do not know. It is generally believed that there has been a great increaes in diseases of the upper respiratory

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tract since the recent epidemic of influenza. However, it is hard to believe that, with the prevalence of sinus disease prior to that time, chronic, non-specific lung infections did not occur frequently. We know that sinusitis was of frequent, if not constant, occurrence in the cases of this epidemic, and many of these which did not result in spontaneous recovery were not recognized and resulted in chronic sinusitis. As a result of this increase in chronic sinusitis cases, we undoubtedly have had a proportionate increase in its sequelae. We also know that in the last decade, partially due to the opportunity of studying large numbers of soldiers of the recent war, great improvement in our methods of diagnosis has been made. This is particularly true of chest work, where our knowledge of turberculosis has been greatly increased. It seems, therefore, more logical to believe that, although there have been more cases of chronic non-specific lung infections due to sinus disease since the influenza epidemic, many cases occurred prior to this time and were incorrectly diagnosed as tuberculosis.

This paper is written with the desire to emphasize the necessity of greater co-operation between the general practitioner or chest man and the rhinologist. I am attempting to deal with this subject from both the viewpoint of the internist and the rhinologist, for only in this light can these cases be recognized early and rehabilitation be expeditiously carried on. The responsibility rests largely on the rhinologist, for these lung infections can be eradicated by the early recognition and treatment of sinus lesions.

Classification

A proper classification of chronic non-specific lung infections resulting from sinus lesions is difficult, for it is conceivable to have any type of lung inflammation of a non-specific nature. Those cases which are met with most frequently, however, and those with which this paper has to deal chiefly are, in the order of their frequency of occurrence, (1) chronic bronchitis, (2) bronchiectasis, (3) bronchial asthma.

There are also certain cases more remotely associated with chronic sinusitis, such as (1) chronic broncho-pneumonia, (2) chronic interstitial or unresolved pneumonia, (3) lung abscess and (4) empyema. While these will be only briefly considered, I trust that they will create discussion, as my experience with them as sequelae to chronic sinus infection has been entirely lacking.

Pathological Anatomy

For a thorough understanding of the etiology, distribution, and diagnosis of these conditions, a clear conception of the pathological anatomy involved is essential.

Drs. Dunham and Skavlem, and Drs. Mullin and Ryder have contributed greatly to this line of research, and, in the following paragraphs, I wish to quote freely from their studies.

In more severe cases of ordinary coryza, the accessory sinuses are acutely inflamed and subject to acute infection. This may progress to the acute purulent stage and from there to the chronic purulent stage. The latter state may be maintained, or the infection may partially subside with the occurrence of hyperplasia of the mucosa and the formation of the pyogenic membrane found in chronic hyperplastic sinusitis. This membrane is thicker than normal, soggy and may undergo polypoid changes. Lavage in case of the last type may yield no pus, while the lymphatics continue to be clogged with infectious materials, and thereby enhance the chances of absorption and its consequences. Drs. Mullin and Ryder injected India ink into the antra of rabbits and traced out the lymphatics involved in absorption from it. They found that the antra are drained by the submaxillary, internal jugular and deep cervical glands, and from there into the lymphatic ducts, the great veins, the right side of the heart, into the lungs and the bronchial and mediastinal glands. Some drainage into the so-called "tonsil node" at the angle of the jaw may occur, and this is of importance in those cases where this gland remains enlarged after tonsillectomy.

The bronchial glands are divided into three groups:

(1) The peri-tracheo-bronchial glands, which are right and left in location and about the size of a large pea. They are in close relation with the trachea, bronchi, inferior vena cava, surface of the lung, the recurrent laryngeal and vagus nerves, and the azygous veins.

(2) The inter-tracheo-bronchial glands number 10 or 12, and are found more under the right than the left bronchus. They are below the bifurcation of the trachea, behind the pericardium and in front of the esophagus.

(3) The inter-bronchial glands occur at the bifurcations of the larger bronchi and are completely buried in the parenchyma of the lung. They are in intimate relation with the pulmonary artery and vein and may compress the former when enlarged.

The normal lymph flow in the lung is from the parenchyma to the hylum, except a small portion just beneath the pleura which is drained by the pleural lymphatics.

The upper lobe of the right lung contains the first and second interspace bronchial trunks, each of which in turn gives off an anterior and posterior division. In addition to these, we have, on the left side, a long branch which runs down into the lingual lip of the upper lobe. Just below the main stem bronchus to the upper lobe, the trunk to the middle lobe runs anteriorly. All branches to the lower lobes arise from the main stem bronchus, and, except for anterior and posterior divisions, have no special classification. This knowledge is of value in locating lesions, as shown by the X-ray, in the parenchyma of the lung.

The septa of the lungs are prolongations of the connective tissue of the pleura, extending down into the lung substance. They divide the lung into secondary lobules and are richly supplied with lymphatics. They act as effective barriers to the extension, by continuity, of pathologic processes characterized by exudations. Spread of the exudate through these septa occurs only when cavitation has taken place. This localized exudate explains the localized rales and "fans" which may be present in any lung inflammation accompanied by exudation, such as is the case in apical catarrh, the pneumonias, infarct, etc.

It seems important at this point to remember, as pointed out by Drs. Dunham and Skavlem, that the first reaction to the implantation of tubercle bacilli in the lungs of sensitive human beings is exudation. If large doses are given, the exudate will be of the P. M. N. type, due to the reaction of the tissues to the foreign protein. The P. M. N.'s give away in about forty-eight hours to the mononuclear elements, endothelial and giant cells. From here reparative changes may take place, such as fibrosis or calcification, or destructive changes with caseation, ulceration and cavitation may occur. From this, we see that in tuberculosis one lobule may be in a state of exudation, an older one caseation, another cavitation, while in the same lung we may find fibrosis and calcification. This produces the characteristic mottling as found in X-ray plates of pulmonary tuberculosis.

The conditions mentioned as indirectly related to chronic sinus infections will be discussed here briefly, so that we can take up, as a group, and in detail, the ones resulting directly.

Dr. J. L. Morse, of Boston, states that chronic broncho-pneumonia in children is practically always tuberculous.

Unresolved Pneumonia. Pneumonia can occur at any time: in fact, it is a frequent occurrence to elicit a history of frequent attacks of pneumonia in the non-specific lung infections due to sinus lesions. One of my cases had a history of pneumonia six times and empyema twice. It is my belief, however, that these are acute intercurrent infections, occurring in a lung which readily lends itself to infections of any kind. Such a history, however, should always lead us to suspect the sinuses.

Lung Abscess. I have never seen a case of lung abscess which could be directly laid to sinus infection. However, with the ever-present post-nasal discharge and lung infection, it seems plausible to expect such a condition. The usual case of lung abscess is due directly to the aspiration of foreign materials, frequently after anesthesias, which, in the presence of lung infection, increases the possibilities of lung suppuration.

The diagnosis of lung abscess is usually not difficult in the presence of a history of sudden onset, cough, expectoration of large amounts of foul purulent sputum, together with the physical signs and X-ray. Bronchoscopy is a great aid in the diagnosis, as well as the treatment, of these cases, by direct drainage of the abscess. The physical findings and symptoms depend upon whether the abscess is superficial or deep, or whether full of pus or empty.

Empyema may be diffuse or encysted, and is usually the result of an intercurrent infection, such as the pneumonias. It does not differ in these cases from the ordinary case of pus in the pleural cavity due to other causes.

Bronchitis, Bronchiectasis and Asthma due to sinus infections have so many things in common that it seems wise to consider them as a group.

Etiology

It has been the experience of W. V. Mullin that the maxillary sinus is the sinus most frequently affected in these cases, and he accounts

for this by the presence of this sinus early after birth, being thus exposed to infection longer. He also suggests that the difficulties in proper drainage and the large area of lymphatics for absorption of bacteria and their products play a part. It is also the opinion of this observer that hyperplastic sinusitis is the most frequent cause of these lung infections. In my experience, the maxillary sinus on one or both sides has been infected and there has been present a purulent infection of one or more of the other sinuses with it. Usually the antra, ethmoids and sphenoids on one or both sides have been involved. I have never seen a case which could be traced to a frontal sinusitis alone.

Climate seems to play a rather large role in these infections, and this is probably due to the fact that sinus lesions are more prevalent in climates which are subject to sudden changes in temperature and barometric pressure.

Age plays little or no part other than the fact that the young are more frequently brought to our attention. Sex and heredity apparently play no part. The white race is nearly always the one affected, due to the wide nasal chambers and free drainage in noses of the negroid races. It has been stated that the under-privileged and rachitic child, who is living under insanitary conditions, is more prone to these lung lesions. However, it has been just the opposite in my experience, for all of my cases, except one, have been in educated and sanitary homes. Those children affected with adenoids, septal deformities and other causes of nasal obstruction, seem to be most often found with lung lesions associated with sinusitis.

The route of infection is probably either by inhalation or by lymphatic absorption, or by both. Aspiration probably plays the major part in most cases.

The types of bacteria found in the nasal discharge and the sputum are those found in the usual mixed infections of the upper respiratory tract. In the order of their frequency and in any combination we find the pneumococcus, micrococcus catarrhalis, B. influenza, Friedlander's bacillus, streptococcus, and staphylococcus aureus and albus. In my cases staphylococci and streptococci have most frequently been found.

Symptoms

The history is, usually, that a nasal discharge has been present from early life or even birth. Snoring, mouth breathing with postnasal drippage, hawking, snuffing and expectoration have been present for a long time. Repeated chest examinations have been made and in spite of frequent negative sputum examinations, a diagnosis of tuberculosis is made. Many of these cases have had sanitorial treatment with little or no change in the lung condition. A history of inaptitude in school, and mental sluggishness, frequent attacks of aphonia, rheumatism, otitis media, and pneumonia can frequently be elicited.

Cough and expectoration with the symptoms of focal infection are nearly always present.

The cough may be periodic or continuous. It is worse at night and in early morning, and particularly troublesome in damp and cold weather. It is usually productive, and bubbling in type, and may come in paroxysms, simulating whooping-cough.

The sputum may be slight, but a profuse, purulent type is the rule. In adults the sputum is frequently foul odored, due to the bronchiectasis which is nearly always present. Hemoptysis is not uncommon.

An afternoon rise in temperature is often present, but this is by no means a constant occurrence. Fatigue is present early, and lassitude may give the impression of a lazy child. General malaise and a rapid pulse are frequent symptoms, while loss of weight may or may not occur. Asthmatic symptoms, either as attacks or in continuous wheezing and shortness of breath, may occur, or even predominate, the picture.

Physical Signs

The general appearance of the patient may be that of a well nourished person of normal weight. Such patients are, however, usually rather pale and anemic, with rapid respirations and early fatigue on exertion. The so-called "adenoid" expression with the high arched palate and broad nasal bridge may be present.

The nasal signs depend upon which of the sinuses are infected and the nature of the lesion. Free pus may be seen as it comes over or beneath the middle turbinate, indicating the group of cells involved. The whole nasal chamber may be filled with pus, which may vary from a thick, stringy mucopurulent type to one of thick pus. The mucosa of the nose may be in a state of hypertrophy, turgescence

or atrophy with crust formation. The discharge may be foul odored, and polypi are frequently noted. On the other hand, there may be little or no pus in the nasal chambers. The mucous membrane may be hypertrophied or the nose may be occluded by a turgescent mucosa. This picture is often present in the hyperplastic type of sinusitis or may be due to the failure of the sinus to discharge into the nose regularly. Suction will often bring pus into evidence in this last type of case, while direct inspection of the antral wall with the naso-pharyngoscope may reveal the former. Lavage in the hyperplastic type may produce no pus.

Transillumination may or may not show marked obscurations, and too much reliance should not be placed in this method of diagnosis.

The X-ray usually shows up any involvement that might be present in the sinus but a cloudy sinus does not always mean that we will find pus or that the sinus is the cause of the prevailing chest condition. Dr. Granger has added greatly to the X-ray diagnosis of sphenoid disease by his so-called "Granger line."

The nasopharynx may show some discharge and its lymphoid tissue may be hypertrophied and extend well down on its lateral walls, posterior to the tonsil fossa. The tonsils have usually been removed in these cases, and, where present, are usually infected. The glands along the cervical chain are readily palpated in most instances.

The larynx and trachea show chronic inflammatory changes and frequently there is much thickening of the vocal chords.

Chest Signs: The chest signs depend upon whether the case is one of simple bronchitis with apical catarrh, or one of diffuse purulent bronchitis with bronchiectasis, asthma or emphysema.

With a slight infiltration of the apex of the lung, a localized area of persistent, fine rales may be found, usually without alteration in percussion note or voice sounds.

In uncomplicated bronchitis there are usually no changes in the voice sounds or percussion note, unless there is some thickening of the pleura. The breath sounds are broncho-vesicular in type, and the rales are usually bronchial and vary in moisture, size and distribution. The bases of the lung are usually most involved, and their expansion may be very slight.

Bronchiectasis merely adds the signs of cavitation to those already described for bronchitis. These bronchiectases may be variable as to size, shape and number. The various stages of filling found in these cavities give signs of cavitation in varying stages. Frequently emphysema may be so prevalent that all other signs may be covered by the tympanitic note on percussion and the emphysematous breathing.

Asthma adds little to the signs of bronchitis, other than asthmatic breathing during the attack.

The X-ray usually shows a diffused peribronchial infiltration with thickening of the trunks throughout both lungs. This condition is progressively more marked from the apex, downward to the base. The trunks are not usually tortuous, but radiate straight from the hilum. In bronchiectasis, fibrous tissue, arranged in rings, presents a characterlstic picture of so-called "ringlets." There may be areas of consolidation, which are more frequently located along the main stem bronchi to the lower lobes, and the fuzziness from there may extend to the periphery.

Differential Diagnosis

Whenever we are confronted with the symptoms of focal infection, with cough and expectoration, which may be blood tinged, we are justified in suspecting tuberculosis. However, there are certain chest conditions due to sinus infection which have the same appearances. This is particularly true of apical catarrah with its presence of a few localized rales at one or both apices, and in dense hilus shadows found in children. In tuberculosis, however, we find, on X-ray, the characteristic mottled appearance, due to different stages of the disease in different lobules, as discussed under pathological anatomy.

These non-specific cases are found to be in a state of general health entirely too good for all the chest condition to be due to tuberculosis. With this large amount of pathology, a case of tuberculosis would, in nearly all cases, show the tubercle bacillus in the sputum.

While in many cases the distribution closely approaches that of tuberculosis, in bronchitis, the heaviest infiltration is usually at the base of the lung, as demonstrated by X-ray and physical examination.

The presence of asthmatic symptoms should

lead us to suspect a non-specific focal infection as the etiologic factor.

In children a negative tuberculin test is of great value, but a positive one is of no significance.

There are certain cases in which a sinusitis is superimposed on tuberculosis, and these add greatly to the difficulty of diagnosis. However, sputum analysis and carefully interpreted X-rays will usually lead to a correct diagnosis.

Prognosis

The prognosis as to life is good if treatment is instituted early and the sinus lesion thoroughly relieved. These cases, however, are liable to intercurrent infection, or the operative measures may lead to septicemia, pneumonia, and death. At the present writing, one of my cases is critically ill with pyelitis and threatened septicemia a month after the ethmoids were radically removed. Lung abscess and endocarditis may cause an early death.

Convalescence is of long standing, particularly when bronchiectasis is present, even after a thorough removal of the sinus infection.

Treatment

Prophylaxis is most urgent, for, by the early diagnosis and treatment of sinus lesions, this condition can be eradicated to a large extent.

The general treatment of these cases is largely constructive, and should follow closely that outlined for tuberculosis. It seems, however, that these cases can be taken care of very well at home, and sanitorial treatment is not as necessary as in tuberculosis.

Fresh air, sunshine, high caloric diet and general hygienic measures are of importance as adjuncts to rest, which is the most effective therapeutic measure at our disposal. Rest should be in bed and consume most of the day, well into convalescence.

A moderate and dry climate is of value, and should be insisted upon in many cases after thorough surgical attention has been paid to the sinuses.

Vaccines are often of value and should be tried in all cases. The cultures are taken from both nose and sputum and grown immediately, before cooling has taken place.

There is seldom any indication to control the cough, except in cases where rest is interfered with. The cough medicine of choice is that which disturbs digestion least and is non-habit forming. Potassium iodide is of value as an alterative and expectorant, while tonics, such as iron, quinine, and strychnine stimulate the appetite. Strychnine alone tends to stimulate respiration and muscle tone, and thus combats the lassitude. Compound tincture of benzoin as an inhalation may add to the patient's comfort. The salicylates are of some value and in cases of calcium deficiency, the calcium salts are adjuncts to diets high in calcium content.

Surgical intervention is nearly always indicated in these cases, and should be directed to the eradication of all infection and infectious material from the nasal sinuses. However, the aromatic oils and anti-septic solutions as sprays and douches, make the patient more comfortable and keep the nasal chambers clean. These patients tolerate mercurochrome as a spray better than most nasal cases.

Lavage of the antra may be tried, but as a rule something more radical has to be done in these chronic cases. The intra-nasal operation should be tried but, as polyps are usually present, it has been my experience that nothing short of some procedure such as the Caldwell-Luc operation will suffice.

Any septal deformity, obstructing drainage or interfering with treatment, should be corrected.

The ethmoiditis may be encysted, and removal of the middle turbinate and drainage of the cells involved may suffice, but total exenteration by the nasal route is usually necessary.

The anterior wall of the sphenoid should be removed when necessary, which is the case in most cases where the ethmoids are involved.

If purulent frontal sinusitis is a factor, the infundibulum should be enlarged by one of the intra-nasal operations. If bone necrosis and polyps are present, however, something comparable to the modified Killian operation is indicated.

Due to the dangers of lung abscess, cardiac decompensation, and pneumonia in these chest conditions, it has been my custom to do all surgery under local anaesthesia. With nerve blocking, any of the sinuses can be operated upon with little disturbance to the patient, even in children. Scopolamine and morphia before operation is of great help in controlling the patient.

I have intentionally avoided a detailed enumeration of the available drugs and various

methods of treatment, for each case is a "case unto itself," and all its aspects should be considered before any plan of procedure is decided upon.

Conclusions

1. There are no characteristic symptoms, other than those relating to the sinus lesion, which differentiate this group of cases from tuberculosis. The X-ray is our most valuable diagnostic measure, but must be correlated with all clinical and laboratory data available to avoid mistaken diagnoses.

2. Cases of tuberculosis which are in the earliest stage, with the exudate limited to a single lobule, cannot often be distinguished from slight apical catarrhs. It is frequently impossible to differentiate a case of hilus tuberculosis in children, where only dense hilus shadows without symptoms of tuberculosis occur, from enlarged hilus glands due to sinus infection.

3. Cases presenting histories of repeated attacks of pneumonia should be suspected of sinus infection as an etiologic factor.

4. The treatment is that for tuberculosis, supplemented by surgical measures sufficiently radical to relieve the sinus of all infection.

5. Wherever feasible, any surgery done in these cases should be performed under local anaesthesia.

6. Early diagnosis and thorough sinus surgery will prevent these cases from occurring and usually relieve the chest condition.

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SOME CONSIDERATIONS IN THE DIAGNOSIS, TREATMENT AND OUT-COME OF GALL-BLADDER DISEASE.*

By J. RUSSELL VERBRYCKE, Jr., M. D., Washington, D. C.

This paper does not attempt to be a complete dissertation upon the very fascinating subject of gall-bladder disease, but will, to keep within time limits, consider some practical points and some of the writer's ideas which are based upon fairly extensive observation.

If Mrs. Smith comes complaining of attacks of excruciating pains in the right hypochondrium or epigastrium, referred to the shoulder blade, perhaps accompanied by vomiting, and particularly if we see her in one of the attacks, we can all be sure that she has gall-stone colic, even though the attack may be due to a plug of mucus in the tube and not a stone.

But if Mrs. Brown comes complaining of gas, constipation, headaches or other symptoms, and so-called indigestion, perhaps only if she eats certain things, how are we to determine if she has functional dyspepsia, gall-bladder disease, or something else, and what shall we advise her to do?

Let us assume that Mrs. Brown has biliary infection. She is probably 6 to 10 years younger than Mrs. Smith, not necessarily in actual age but in the course of disease, since we know that the average gall-bladder before giving symptoms sufficient to urge operation has probably been diseased and that the pathology has been gradually getting worse for an average of nearly ten years. If Mrs. Brown and Mrs. Smith compare notes as to their symptoms, which they surely will do if they know each other, they will note no similarity unless Mrs. Smith remembers that before her terrible agonizing attacks started she had "indigestion" somewhat similiar to Mrs. Brown's for some years.

If Mrs. Brown is to have an early diagnosis and treatment, the fact that the symptoms of early gall-bladder disease, while possibly suggestive, are not usually diagnostic, makes it necessary that her physician send her to the gastro-enterologist or diagnostic clinic for objective methods of diagnosis, for there are now methods of precision available. The specialist then makes a complete physical examination, examines the blood, urine, stomach

*Read by invitation before the Warren, Rappahannock and Page Medical Society, at Front Royal, Va., April 19, 1927.

contents, stool, and traces the barium meal through the entire gastro-intestinal tract for the purpose of eliminating or finding other conditions which might simulate or accompany a diseased gall-bladder. At this point a diagnosis can be made only by exclusion, and until the past several years this was our limit, but now we have the Graham gall-bladder X-ray, one of the greatest medical advances of the decade. By it the gall-bladder is made visible and its anatomy and physiology made clear. You are all probably familiar with the Graham test by this time, but since our series at Garfield Hospital is one of the largest in the country, numbering at present about 800 cases, it may be interesting to present a few of the results and our conclusions. Pictures are made five, eight and twenty-four hours after the intravenous injection of sodium tetraiodophthalein. Normally the gall-bladder shadow shows fairly large and distinctly five hours after the injection. Three hours later it should be darker and smaller as two of the gall-bladder functions, of abstraction of water and contraction, are brought into play. At the twenty-four hour period the shadow should be quite dark and much smaller, as the contents are concentrated about twenty times.

Complete absence of gall-bladder shadow is considered absolute evidence of disease, provided the liver is normally functioning, and has so proven in nearly 100 per cent of the cases. So, too, the presence of stones, which can be demonstrated many times more frequently than by plain X-ray, may be considered absolutely positive evidence of disease.

Other findings of importance are poor density of the shadow, caused by either inadequate filling, poor absorption of water, or thick-walled gall-bladder; absence of change in size at different examinations, showing inelasticity; deformities of shape; marked variations in size from an accepted normal, etc. Some of the variations from normal functions are quite marked, but others fade out into the questionable zone, so that it is quite surprising that the interpretation of the films results in the high proportion of 93 per cent to 94 per cent accuracy in proven cases. Statistics from Boston, St. Louis and Rochester show approximately like figures. So far as I know, there are few if any tests in medicine which give such a degree of accuracy. Think of it, if cholecystograms of 100 patients were placed before any one experienced in reading them, without the patient being seen or a question asked, between 90 and 100 per cent can be diagnosed correctly.

During 1926 I removed 32 gall-bladders. There was only one error of the Graham test in this group, 97 per cent correct.

To return, then, to Mrs. Brown who has been positively diagnosed as having biliary disease by a consideration of her symptoms, exclusion of other conditions, and a positive Graham test. There are certain questions that Mrs. Brown wants to ask. Nearly all of the patients ask them, so that they will be considered in order, and I will give the answers that I make.

Mrs. Brown: Do you know what the trouble is Doctor?

Answer: You have chronic inflammation of the gall-bladder.

Mrs. Brown: Does that mean gall-stones?

Answer: You may or may not have gall-stones. They don't always show even in the Graham X-ray, but, if they are present, they are only an incident in the course of gall-bladder disease. They are not important in themselves unless they produce gall-stone colic, and even this can be produced by a plug of mucus or swelling of the duct without a stone.

Mrs. Brown: Does this mean an operation?

Answer: I heartily agree with the epigram of Dr. Stuart McGuire who says, "Every patient with gall-bladder disease will eventually have to be operated upon if she lives long enough." It is rare that the gall-bladder presents a surgical emergency, so there is some latitude as to the choice of time. But if it has to be done at some time, it is far preferable to do it early, not only for the relief from symptoms and the avoidance of the possibility of complications, but because early operation is safer and followed by more perfect results.

Mrs. Brown: What will happen if I am not operated upon?

Answer: That is difficult to say. You may only go on having dyspepsia or pain which should tend to get worse and more continuous. But there are very definite chances that you run of serious complications, such as inflammation of the pancreas, progressive hepatitis, blocked common duct and cholangitis, any one of which is a very serious matter, and the operation for the complication, while far more serious than simple operation, is frequently

only a makeshift to save life and not a curative one.

Mrs. Brown: What is done at operation?

Answer: Usually the gall-bladder is removed entirely. It used to be drained, but experience taught that only 50 per cent of the drainage cases remained well.

Mrs. Brown: But Doctor, how can one live without a gall-bladder?

Answer: The gall-bladder is an organ which, while it has functions, is not necessary for either life or health. Patients feel just as well and don't know the difference whether they have a gall-bladder or not. As a matter of fact, some animals have gall-bladders and some do not. A mouse has no gall-bladder, the rat has. The steer has one but the reindeer not. One of the functions of the gall-bladder is to act as a temporary reservoir, but it holds but a fraction of the amount which is secreted by the liver. To hold more it has the power of concentrating, by the absorption of about 20 parts of water. Another function is to act as a pressure regulator for the bile tract, but experiments have shown that while normally it takes an average pressure of approximately 400 m.m. to open the valve and to allow the bile to enter the intestines, after the gall-bladder is removed, pressure falls in the ducts so that only about ¼ of the amount is necessary to open the valve. Consequently, there is no need for it as a pressure regulator.

Mrs. Brown: Is the removal of the gall-bladder a serious operation?

Answer: The seriousness of any operation depends upon several factors, such as the condition of the patient, the ability of the operator, proper preparation for operation, the choice of time for operation, etc., but the patient's chance can be figured out from the law of averages.

Those who play golf know that there is a so-called par or average perfect score for the course, say, 70 strokes. There are a few golfers who can consistently make close to par and every once in a while, with a certain amount of luck and favoring conditions, one of these may do much better than par or average perfect. So, with operations. I like to figure out par as based on average results. Par for gall-bladder removal is probably 96 out of 100, that is 4 deaths per 100. The average mortality throughout the country is probably 8 per cent. Dr. Lyon recently stated that an analysis of his cases, operated upon by the best surgeons in Philadelphia, showed a 10 per cent mortality. On the other hand, there are some operators who have a record better than par. The mortality at the Mayo Clinic and several other places is only 1½ per cent. My own series since I have had a death now totals 72 cases. We can in any event say that operation for the relief of the condition is not nearly as risky as is the disease itself.

Mrs. Brown: A friend of mine was treated by some doctor who had her swallow a little rubber tube and injected Epsom salts. Can't I be treated that way and be saved an operation?

Answer: You refer to the Lyon biliary drainage. It was based upon the theory that Epsom salts applied directly to the duodenum caused the muscle at the outlet of the bile duct to relax and the gall-bladder to empty. It is true that there is a profuse flow of bile following this treatment, but it has not been conclusively proven that the gall-bladder itself empties. Furthermore, even if it did empty, it could not be expected to effect a cure, since it is usually the wall of the gall-bladder that is diseased, and drainage of the bile from inside could not be expected to help much. Furthermore, if surgical drainage for several weeks continuously fail to cure more than half of the cases, intermittent drainage for an hour or so at a time could not be expected to accomplish as much. Practically, it has worked out this way in my experience. After trying out the medical drainage in about 100 cases, I have found that, while there were a few quite remarkable reliefs, in a majority operation was finally required and both time and money were lost, so that we have given it up except as a poor second choice.

Mrs. Brown: I am almost satisfied, but I must ask another question. You say that I don't run so very much risk from the operation, and that no other treatment is advisable. How much chance have I of being well after the operation?

Answer: There are only about 5 per cent failures from a properly chosen and well-performed gall-bladder operation. There are some others who are not completely cured, especially those who have had the disease for a long time before operation, but the majority are absolutely well after operation. Even constipation, colitis and other conditions which the patient may have with the cholecystitis

are relieved in 60 per cent of the cases without further treatment.

Mrs. Brown might ask other questions, such as whether a gall stone could be dissolved, why a friend of hers who took Mayer's Gall Stone Remedy passed a lot of stones, etc., but we will assume that she is satisfied and I hope that I have convinced her.

In conclusion, I will stress some of the factors that make for safer and better gall-bladder operations:

1. Early operations.
2. Choice of time for the operation, and the avoidance of operating during an acute infection of any kind, if possible.
3. The general condition of the patient.
4. The ability of the operator to operate reasonably quickly, without undue traumatism and with technical accuracy.
5. A good operating team, which includes assistants and nurses who are used to the operator's methods.
6. A good anesthetist and the choice of the best anesthetic.
7. Careful preparations for the operation, which can make fairly safe risks out of many otherwise poor risks. I use mixed vaccine of pneumococcus, streptococcus, staphylococcus and colon bacillus as a routine several days before the operation, and feel that the incidence of pneumonia and wound infections are reduced to a minimum.
8. Careful and intelligent post-operative treatment looking toward the prevention or relief of complications.
9. Certain points of technique, of which I shall only mention the closure without drainage, as advocated by Willis, whenever it is felt to be safe.

Let me repeat, in closing, that gall-bladder disease can be proven with a high degree of accuracy by the Graham X-ray; that, once proven, the thing to urge is the operation early, after proper preparations, and under as ideal conditions as possible.

815 *Connecticut Avenue, Northwest.*

RECOGNITION AND VALUATION OF CARDIAC SYMPTOMS AND SIGNS FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.

By B. H. MARTIN, M. D., Richmond, Va.

The ability to recognize is a gift and virtue much to be coveted and sought after in every phase of human endeavor and activity. It is an art, if possessed by the physician, which will endow him with marked advantages over his fellows. But all of us can, by careful and persistent observation and untiring effort, acquire a chronological order of signs and symptoms which will be of incalculable help to us and a great advantage to our patients.

Before enumerating some of the most valuable signs and symptoms of cardiac derangement, I would like to say that a physician should know his patient very thoroughly as to his physical and mental relations, and realize that in this advanced day of thought and instruments of accuracy and precision the human equation has always to be reckoned with. There are a number of instrumental methods of examination, among them the electrocardiograph and the roentgen examination, the latter being the most valuable procedure we now possess for determining the size and position of the heart. In examination of the vast majority of patients, the diagnosis can be made independently of instrumental methods. It must not be inferred from this that graphic records can be dispensed with, for the power to diagnose a great many cases comes through the information thus obtained. It is not necessary for the physician himself to take records, but he must be familiar with the interpretation in order that he may appreciate and apply results. The value of all these things depends upon the doctor's ability to recognize the very first evidence of heart failure and the proper measures instituted to minimize the destructive effects.

With increased interest of the people being aroused over tuberculosis, cancer and pernicious anemia, we overlook the fact shown by statistics that some form of heart disease is more often put down as cause of death than any other single disease. Therefore, it behooves the general practitioner, who is the logical man, to be so well equipped and acquainted with the early manifestations of carditis, in any of its forms, that we will be able to recognize it. In children, in my judgment, a great deal of it arises, and is never properly diagnosed or treated. The child grows into adolescence and frequently into maturity, when, to our utter chagrin, we find them with a bad cardiac lesion, which shortens their usefulness and longevity. The mother will probably remind us of some febrile condition in early childhood from which the child never fully re-

covered. The mother will tell us that the child tired easily, was irritable, whiny, and complained of vague pains in the body, and that we had agreed with her that they were growing pains, which we thought the child would out-grow. The best and safest way to acquire this information is by regular and stated examinations of your clientele and with a good system of well-kept records we can make use of these facts to reduce the number of cardiac cases. It is just here our greatest work is to be done. After we have found this information, we should be very certain of our position and then should give such directions as—rest over long periods, proper food and elimination, insisting and demanding cooperation on the part of the mother or nurse. So often an easy going doctor allows the family to persuade him to relinquish some of his directions and the patient is allowed too much liberty. In the end, great harm results to the patient.

In listing the symptoms of cardiac derangement, one of the most valuable aids will be a carefully taken history, with due appreciation of the patient's statements, aspects, sensations, condition of other organs, past history, and the field of cardiac response. The earliest and most valuable information regarding the efficiency of the heart is revealed by the patient's sensation in response to effort, and his consciousness of the unusual manner in which the heart may beat. From a due appreciation of the patient's sensations the nature of the trouble will often be revealed; moreover, in many patients the action of the heart may become abnormal at intermittent periods, so that we have to depend on the patient's description of his sensation for the knowledge of his trouble. Heart failure resolves itself into the question of the amount of reserve force available and, consequently, it is at this junction we begin to find out that amount. Therefore, the facts that produce the first signs of discomfort need the most detailed inquiry.

Among the symptoms, we may note breathlessness or air hunger, sense of suffocation, inability to stop breathing, quiet rapid breathing free from distress, continuous labored breathing, labored breathing brought on by exertion, attacks of cardiac asthma, Cheyne-Stokes respiration, pulmonary hemorrhage, acute suffocation, edema of the lungs, enlarged liver, swollen feet, puffiness around the ankles, dizziness, vertigo, arrhythmia, hypertension, degree of exertion which can be undertaken, lividity of the face and lips, weakness, sensation of constriction in the chest, a feeling of weight in the limbs, sleeplessness, particularly in the aged, and ascites. An opinion or diagnosis should never be based on the presence of one sign alone, however abnormal that may be. Any sign which is indicative of heart failure is always accompanied by other symptoms. The converse is equally true, that any sign unaccompanied by abnormal phenomena may be taken to be of little or no importance or significance, so far as the functional efficiency of the heart is concerned.

You have probably noticed that the writer has almost neglected to refer to cardiac murmurs and hypertension, for, in the past, great stress has been laid on these symptoms and they are of undoubted value. My aim, however, is to emphasize the fact that the human organism is composed of a commonwealth of countless millions of cells, vital units, bound together in a harmoniously working whole. Therefore, any disease that affects the human body in any locality or organ is likely to produce effect on or derangement of the others, by means of toxins either of bacterial or poisonous origin. Such diseases as tonsillitis, influenza, pneumonia, diphtheria, scarlet fever, typhoid fever, rheumatism, malaria, and many others have a very marked effect on the heart because of the toxins generated in these diseases. Therefore, it is the writer's custom to keep the patients suffering with any of the above diseases in bed, so as to restrict their exercise and get them to rightly appreciate what a proper convalescence means following these diseases, thereby decreasing heart lesions.

There is no profession where one has as many opportunities for service to humanity as the true physician. The doctor is with them when they make their advent, and is constantly in attendance and looking out for them until they pass the dark shadow of death; therefore, as physicians we might take this as our motto:

"I would be true for there are those who trust me,
I would be pure for there are those who care,
I would be strong for there is much to suffer,
I would be brave for there is much to dare,
I would be a friend to all the poor and friendless,
I would be giver and forget the gift,
I would be humble for I know my weakness,
I would look up and love and live and lift."

5510 *Grove Avenue.*

WHY YOUNG PHYSICIANS ARE NOT LOCATING IN THE COUNTRY.*

By W. W. KERNS, M. D., Bloxom, Va.

Realizing that there are very few diseases upon which I could write that would be of much interest to you, I was almost at a loss as to what topic I should discuss, when Dr. Stubbs asked me to read a paper at this time. But, in selecting this subject, "Why Young Physicians Are Not Locating in the Country", and considering my age and experience, I feel that I can give you some real facts upon which to ponder. Ten years ago, I would not have dared to read this paper before any Medical Association, on account of the criticism I would have received. But, as it is, I am fast approaching that age when I will no longer be able to continue my work as a country doctor, and I feel that if I can say or do anything to help the young physicians who desire to locate in the country, and the country people as a whole, I will be amply rewarded, no matter how much I may be censured.

I have practiced medicine in the country thirty years, have never changed my location, and consider myself an average country physician. Starting out with a horse and road-cart, I am now able to ride in a Ford coupe.

During the time, I have sent to various hospitals:

Six cases of tubular pregnancy.

Twenty cases of strangulated hernia.

Forty-three cases of fibroid tumors of the uterus.

Twenty cases of cystic tumors of the uterus.

Sixty-one cases of cancer of internal organs.

Thirty-six cases of some form of kidney trouble.

Thirty-two cases of gall-stones.

Two hundred and twenty cases of some form of ovarian or tubular trouble.

Three hundred and twelve cases of appendicitis.

The above list makes a total of 750 of what I term major operative cases, for which the surgeon received from $50 to $500 a piece for each operation, I will put it on an average of $100 a case, making a total of $75,000 for this work.

How much did I get out of these cases?

Called up, as a usual thing, at midnight, driving on an average of five miles each way, examining the patient, diagnosing the trouble as best I could, trying to soothe and comfort the family, rushing the patient off to the hospital 750 times at $5.00 a night visit, making a total of $3,750.00 less 750 telephone messages to the hospital at 50 cents each—$375.00, less one-half my fee (a fair average) that I never receive because, by the time the patient returns home he has spent all he had and all he can borrow, I have left a grand total of $1,687.50 against $75,000.00 that the surgeons received.

In addition to the above, there are hundreds of minor operative cases, such as tonsillectomies, eye, nose, ear, throat, rectal and skin troubles that my patients consult me about getting my advice as to what specialist to put themselves under, and for all of which I receive only thanks for my trouble and counsel!

If we country doctors even hint anything about splitting fees, the surgeon and specialist will throw up their hands and hurl back at us "Medical Ethics", and say, "All you country doctors do it to diagnose the cases and send them to us; we are the ones who do the work, and should receive the pay." What are they sending the country doctor in return? May be a letter of condolence to our widows and orphans, and a write-up in the obituary column of our medical journal when we die.

And, besides this, in steps the State with the County Health Unit to take a whack at us, vaccinating children and every one else for 10 cents, for which we get $1.00, using toxin-antitoxin for 50 cents for which we get $3.00, using typhoid fever antitoxin from 60 cents to $1.00 for which we get $5.00, holding tonsil clinics and charging $10.00 for half doing the job. Lectures are given to midwives by county nurses, teaching negro women (unknowingly) how to produce abortion.

No negro midwife should be taught the anatomy of the genital organs. I have had twenty-seven abortions within the past seven months. The majority of these cases had consulted some negro granny, who told them how to do the work.

How about the county health physicians? Do they get up at midnight, drive eight to ten miles to relieve the suffering of some poor woman or child? Not by a long shot.

And to these health physicians, we country doctors must make a report every Saturday for every thing that comes under our observation during the week—from a tooth ache to the delivery of a bouncing baby.

*Read before the Walter Reed Medical Society, at Yorktown, Va., May 26, 1927.

Now don't think that we can get off by just mentioning this baby. We must give the exact moment it was born, and full family history. Did you use drops in its eyes? Failing to do this, you may be sure we will get a jacking from headquarters in Richmond. And if we should be called to this baby a few days after birth, arriving just in time to see it draw its last breath, we must write a death certificate for it, giving date of birth, full family history, the date of death, and the exact cause of same. Right here is where they make me lie,—or do some tall guessing, for, if I fail to give the exact cause of death, I get another bawling out from headquarters in Richmond.

I trust you will not think I am sore with the surgeon, specialist, or health department, for God knows I love you all, and why shouldn't I? We received our medical degrees, passed the state medical board, and served our internship all alike, but I, unfortunately, located in the country.

Today young doctors are not locating in the country, and I can't blame them; for, under the present conditions, they are up against state medicine and a decent starvation.

State medicine is coming, and that—fast.

I see but one remedy, one way to induce the young physician to locate in the country, and that is for the city surgeon and specialist to take him in partnership with them! and for the state to let the Health Unit of each county be composed of every reputable physician in that county, each to have his special work to do and receive the pay alloted to that work. This would assure the patient, who goes to the surgeon and specialist, the very best treatment and attention, at a less cost to the patient; it would bring the physicians in each county closer together, causing them to co-operate and have a better feeling one towards another and towards those who are at the head of the health department in Richmond; and this is that for which we all should strive.

This is a day of preventive medicine, and, in order to make it a success, we must all work hand in hand. At the same time, the country doctor must have more than an ordinary living to keep him there.

I am sure I shall be severely criticized for reading this paper, especially by the "High Ups". To those who censure, I have no apologies to make whatever.

I have not written this paper for my own benefit, but for the good of those who are to follow.

Think of the hundreds of country physicians who have passed away, leaving behind homeless and penniless widows and orphans. You knew them and I knew them. They were at the beck and call of every man, woman and child within the radius of their practice. Money or no money, no angel in Heaven should have a brighter crown than those noble men; but how much brighter life would have been to them and their families had they been co-partners with the surgeons and specialists!

A CONSIDERATION OF SUMMER DIARRHEA IN INFANCY.*

By HOWARD URBACH, M. D., Richmond, Va.
Associate Professor in Pediatrics, Medical College of Virginia.

What is summer diarrhea? Within the scope of this paper, we shall define it as "A condition in which there are seven or more loose stools each twenty-four hours in the breast fed, and three or more loose stools in the bottle fed." In either case there is evidence of indigestion.

CLASSIFICATION OF TYPES

Infectious or Bacillary	Shigi
	Flexner
	Amœbic
Non-Infectious or Non-Bacillary	Acute Intestinal Intoxication
	Protein
	Carbohydrate

INFECTIOUS OR BACILLARY GROUP

This group is less frequent in the infant but has a higher mortality.

Symptoms: These are sudden onset, occasional vomiting, always temperature (100-104), ten to twenty stools with marked straining the first twenty-four hours. After this, the stools increase to an average of thirty in twenty-four hours (ranging from fifteen to forty-eight), until the quiescent period on or about the fifth to tenth day of illness. During the first twenty-four hours mucus is present. By the thirty-sixth to the forty-eighth hour, mucus streaked with blood is present. By the fourth or fifth day we have mucus, blood and pus. In this group we do not get the marked dehydration as in some of the other forms of diarrhea.

Diagnosis: Diagnosis of this particular type is a bacteriological procedure. The stool in all diarrheas, accompanied with blood and pus.

*Read before the Walter Reed Medical Society, at Yorktown, Va., May 26, 1927.

should be cultured. A microscopic examination of the stools should be made at the bedside; otherwise, an amoebic infection may be overlooked.

Treatment: Diet, while important, is apparently not as important in treating this group as the group next to be considered. We should give principally, cooked cereals, zwieback, fat-free broths, well-diluted fruit juices (orange, lime, lemon), fermented lactic acid or protein milk.

Medication: B. A. Culture, drams 1, may be given in fruit juices. The following formula is quite acceptable to most patients,—Water, 1 pt., Orange Juice, 2 ozs., Sugar (preferably Lactose) to season. M.—Sig.: Two ounces every two hours with B. A. Culture, drams 1.

Bismuth emetin iodide, grains three—three times daily (short of nausea) is probably the most useful of the drugs for the amoebic type.

For the Flexner or Shiga types, Flexner's serum offers the greatest hope, 30 c.c. given preferably intravenously, and repeated in twelve hours; then every twenty-four to forty-eight hours until there is evidence of improvement. In view of the fact that it takes three to seven days for a proper typing of the infecting organism, I am convinced that we are justified in using Flexner's serum in all cases of diarrhea when blood appears in considerable quantity within thirty-six hours after onset, even if, after careful search at the bedside, microscopic examination fails to reveal the presence of amoeba.

Second Group or Non-Infectious Type

Acute Gastro-Intestinal Intoxication.—In this type the onset is sudden, with frequent vomiting, marked tympany, temperature 101-106 degrees, severe toxemia, drowsiness, twelve to thirty loose stools (foul smelling, putrefactive at first, then practically odorless) and marked dehydration.

Treatment: Withhold all nourishment for twenty-four hours. If after the first five or six stools there is much tympany and marked odor to stools, a dose of castor oil is indicated. During the first twenty-four hours the patient is allowed the following mixture in small quantities frequently:—Water, 1 qt., Soda, 1 teaspoonful, Lactose, 1 ounce.

This mixture is quite acceptable to patients. It tends to allay gastric irritation, aids in neutralizing acetone bodies already present, retards the breaking down of the fat cells, hence inhibits to some extent the formation of additional acetone bodies.

Diet: Very weak boiled skimmed milk with cereal diluent formula, increased in quantity and quality as patient's condition warrants. When the watery stools have subsided, and a stool with some body, or a pasty consistency, is present, cooked cereals, zwieback, or toast from stale bread are allowed.

Protein Diarrhea.—In this condition "Some Something" happens to baby's metabolism whereby it is unable to take care of the formula with normal percentage of protein. In this type the stools are not as frequent as in other types nor are they as liquid, but the odor is of a distinct putrefaction, and they occasionally may excoriate the buttock. There is little or no green color, being more frequently a brown color.

Very rarely is medicine indicated. A diet high in carbohydrate will take care of the infant receiving a milk diet only. This may be accomplshed by substituting whey and adding sugar sufficient to bring the mixture up to 8 per cent carbohydrate. Whey made from whole milk gives a lower percentage of protein (0.86 per cent), but a higher percentage of fat (0.96 as against .04). With infants ten to twelve months of age, starches are gradually added.

Carbohydrate Diarrhea.—This is by far the most frequent type. Here, again, "Some Something" goes wrong with baby's metabolism, whereby it is unable to take care of milk formula with the usual percentage of carbohydrate. Presumably a change occurs in the intestinal flora, just the reverse of the protein, when a putrefactive organism causes a fermentative type of organism. It is a well-established fact that when sugar is fermented by the action of bacteria, either volatile or non-volatile acids, or both, are formed—the former, acetic, butyric and formic; the latter, lactic. Free acetic acid has been recovered from the stools of babies ill with carbohydrate diarrhea. This acid within itself is quite capable of increasing peristalsis or injuring the intestinal mucosa.

In this type of diarrhea the stools are liquid, frequent (seven to ten in twenty-four hours), and, by reason of their acidity, excoriate the buttocks. There is no evidence of putrefaction,

but there is nearly always a distinct acrid or fermentative odor with green color.

If these statements are true, it is reasonable to assume that in order to effect a cure, all that is necessary is to change the intestinal flora. This may be accomplished by the use of protein milk. Until the introduction by American manufacturers of protein milk in powder form, the preparation of this food in many homes was impractical, and in many instances impossible, due to its difficulty of preparation. With the powdered protein milk, the most ignorant mother should be able to prepare it. Ten packed level tablespoonfuls of the milk to one quart of water gives the same percentage as the original formula of Finkelstein (Eiweiss-milk)—fat, 3; sugar 1.8; protein 3.75. The percentage of powered protein when properly diluted is fat, 2.25; sugar, 2; protein, 3.16.

Another method by which approximately the same percentage is obtained is by the use of calcium caseinate, using 1/3 to 2/3 of an ounce to the quart of milk formula, which is quite suitable to those babies that object to sour milk or regurgitate. I find that the stools return to normal more readily on the powdered protein milk. After the stools do not exceed three in twenty-four hours, and give evidence of becoming formed or of considerable body, the baby is ready for a gradual substitution of protein milk to the previous formula.

General Consideration of Treatment of Summer Diarrhea

In addition to treatment mentioned in discussing each type separately, I desire to call attention to the following, which at some time during the illness may be useful, and at times may be life-saving measures, regardless of the type.

Colonic Irrigation:—That great physician and teacher, the late L. Emmett Holt, is credited with making the statement that "No case of summer diarrhea should be treated without at least one colonic irrigation. If it does good, repeat it. If it does not do good, do not repeat it." While the tendency of recent years has been toward discontinuing, or at least diminishing the number of colonic irrigations, it nevertheless has its field of usefulness. In the case of an infant with a diarrhea persisting for several days, with a sudden or gradually increasing temperature, tympany, tenesmus, restlessness or irritability, a colonic irrigation of normal saline or sodium bicarbonate, or the two combined, will frequently result in a quiet, restful sleep.

If strain or tenesmus is severe, use 1 per cent tannic acid solution, followed by the time-honored starch water and laudanum solution. I have used 1 and 2 per cent mercurochrome solution, also 1 per cent silver nitrate, but am yet to be convinced that their use is justifiable.

With the infant that is not taking much water, or shows evidence of the slightest degree of dehydration, a hypotonic normal saline irrigation may be of service.

Starvation: During the first twenty-four hours of illness, all food should be withheld, regardless of type of diarrhea; water may be given *ad libitum*, as also well diluted fruit juices.

Drugs: Most cases of summer diarrhea, especially the protein and carbohydrate types, do not require the use of drugs. However, if the patient has twelve or more stools and does not show evidence of improvement within thirty-six hours, bismuth with sulphur is used. If the patient is very uncomfortable, and in the absence of tympany or much fever, opium in the form of paregoric or Dover's powder is indicated.

Lavage and Gavage: At times, regardless of exercising our better judgment, we are confronted with the fact that the infant refuses water and nourishment, in whole or in part. Then it becomes necessary to use the stomach tube. Kirley called attention to the fact that a baby who could not retain food or water when taken voluntarily, would do so quite frequently when introduced through the stomach tube. The judicious use of the stomach tube for the baby that vomits water and nourishment, or refuses either, can frequently tide over the patient until such times as it can take and retain water and nourishment.

Dehydration: Regardless of intelligent dietetics and medication, we sometimes find ourselves face to face with a patient whose life is in jeopardy from dehydration due to excessive emesis, or draining off of body fluids by way of the bowels. What are we to do to replace the body fluids? How, then, are we to replace the fluids with the maximum safety and the minimum pain? This may be done:

1st, Subcutaneously;

2nd, Intravenously;

3rd, By means of the anterior longitudinal sinus;

4th, Intraperitoneally.

1. The subcutaneous route is slower of absorption and more painful.

2. Due to the size of the veins this method is almost impractical.

3. The anterior longitudinal sinus is available in most patients from ten to fourteen months of age, but this method is somewhat tedious and is attended with danger.

4. The intraperitoneal route is to be preferred because it is not as painful, or certainly no more so, than other routes, and with little if any more hazards. More fluid can be introduced, with less discomfort and danger to the patient. The intravenous and anterior longitudinal sinus methods should be used in case it becomes necessary to add soda or glucose to the normal saline solution.

1311 *Grove Avenue.*

BURNS OF CORNEA.*

By C. S. DODD, M. D., Petersburg, Va.

In discussing this subject, we feel it is advisable to outline briefly the structure of the cornea.

In size, it is stated to be 12 m.m. in the horizontal diameter and 11 m.m. in vertical diameter, with posterior curvature somewhat greater than the anterior surface; it is thinnest in the center.

The cornea is situated like a watch crystal on the joining structures, and in health is transparent. It consists of the following layers:

1. Anterior layers, consisting of epithelium of pavement type with cylindrical cells the deepest; then the round, and next the last, the flat cells.

2. Bowman's membrane—which is a homogeneous substance connected with the corneal lamellae beneath. It is separated from the epithelium and has no cells.

3. Stroma or substantia propria—which is composed of ground substance and cell. The ground substance is composed of connective tissue and is united by cement substance forming bundles which are connected by laminated structure. Between the lamellae lie the cells or corneal corpuscles which are of two types,—motile and non-motile. The non-motile or fixed cell has a large nucleus and a flat protoplasmic cell body. The motile corpuscles are the wandering cells which are really white cells that have made their way into the cornea and travel along the lymph chambers.

4. Descemet's membrane is a homogeneous hyaloid structure which forms the posterior boundary of the cornea and is chemically different from the adjoining structure. It is very resistant to chemicals or structural changes as observed in destructive changes of outer layers of the cornea.

5. The endothelium consists of a single layer of flattened cells.

The *cornea* has *no blood vessels* as these end at the margin of the cornea and then form a loop. From these loops the blood-plasma passes into the stroma of the cornea.

The *nerves* are from the ciliary and conjunctival nerves and are very numerous in stroma, passing over the Bowman's membrane and epithelium even to the outer layer; therefore, the cornea is exceedingly sensitive.

We now come to our subject proper and shall limit our remarks to burns of the cornea only, but admit there is a besetting temptation to refer to the conjunctiva and lids as well.

The *causes* of these burns include ammonia, acids, alkalies, hot metals, curling irons, and lime.

The position of the cornea makes it liable to be first injured by these substances, and our own record shows 266 cases where the cornea alone was injured as against 630 cases of burns of conjunctiva and cornea combined.

Symptoms: There are several symptoms common to all burns of the cornea, namely, pain—slight to excruating,—impaired vision, photophobia and marked lachrymation. The cornea may look dull or opaque. The deeper the burn, the more pronounced the opacity. In light cases the opacity is gray. In severe cases the opacity is whitish, or if a few days old, yellowish-white. In the worse cases the cornea may be porcelain white and dry. The cornea may be insensitive. After a few days keratitis may develop with hypopyon and iritis.

Lime Burns: This substance on entering the eye gives rise to intense irritation and the lids close spasmodically. The copious tears that flow would be a most favorable thing in most instances, but in this case it is most unfavorable, as the lime is pressed against the cornea and the tears slack more of the lime, generating heat which hastens the work of destruc-

*Read at the eighth annual meeting of the Virginia Society of Oto-Laryngology and Ophthalmology in Charlottesville, Va., April 30, 1927.

tion. The lime forms calcareous deposits on the cornea.

Ammonia Burns: The eye is painful and smarts, but if a large amount of the chemical enters the eye, vision may be lost and the eye become like china,—dry, glistening and insensitive.

Curling Irons: These burns usually affect the epithelium only, and healing is frequently rapid. Pain is commonly severe at first, with marked photophobia.

Nitric Acid and Nitro-Sulphuric acid burns are the ones I have treated most. The eye is painful, pus soon forms, the stroma decays, and often the eye is lost.

Hot Metals: It is remarkable how slight the injury may be in some instances of burning by hot metals, but, of course, many are severe and fatal to sight.

Complications: Symblepharon, dense leukoma. In severe burns there is set up a delimiting suppuration, and a flat surface is left which leaves the vision impaired, or staphyloma, due to thinnning of corneal substance. Sometimes there is perforation with iritic adhesions. Another grave complication is glaucoma.

Prognosis: It is not the burns that look the worst to begin with that necessarily have the most unfavorable termination, as, for instance, after a burn from hot metal the eye condition is alarming, but may in a few days clear up and the vision return; conversely, after ammonia burns the cornea is transparent at first, but in a few days is like porcelain. An insensitive cornea is a grave sign. The opacity is of vexing concern, and it is well to remember the extent of the opacity depends on the extent of the burn, but the intensity of the opacity depends upon the depth to which the corneal tissue has been destroyed. Glaucoma is to be dreaded here as well as in whatever condition it appears.

Treatment: Cleanse the eye of all foreign substance and cocainize with 5 per cent solution; or better, 2 per cent solution of Britvn; use castor oil or the like. We prefer troalin—tion; or better, 2 per cent solution of Butyn; to bed in a dark room and relieve pain. In lime burns, remove each particle. Sugar or salt solution may be used at first, but, after all lime is removed, use only oil.

Curling Irons: Use the general directions.

Hat Metals: Use cocain or two per cent solution of Butyn; together with boric acid salve or troalin.

Nitric Acid and Nitro-Sulphuric Acid: Use cocain and oil; put the patient to bed, watch for complications.

Symblepharon, Glaucoma, Iritis: When these conditions occur, each will have to receive appropriate and energetic treatment.

In burns, we are opposed to the use of atropine, since we have had some sad experiences after its administration, especially with the nitric acid burns, so use cocaine and homatropine.

In treating the opacities, we use salt injections into the conjunctiva after all irritation has cleared up, together with dionin. Begin with a 2 per cent solution morning and evening for twelve days; omit for four days, then increase the strength to 5 per cent, and use as before; then 7 per cent, and finally 10 per cent —repeating if found beneficial.

SURGERY: SPECIAL AND GENERAL WITH REFERENCE TO UROLOGY.*

By JACOB S. ROSENTHAL, M. D., Washington, D. C.

Possibly no field of surgery is more often invaded by the general surgeon than that of urology. So often is this the case that I have heard several practitioners make the statement that there was no real need of a urological surgeon; and, that any need for urological surgery was readily met by the general surgeons. On a recent trip of observation, I determined to compare the work of the two by observing the same operations done by both types of surgeons. Owing to the limitation of time to a few months, nothing like a complete comparison could be made, though there was sufficient work on kidneys, bladder and prostates to get a very good idea of the differences in the two types of operators. A marked difference was observable between the older and younger general surgeons; in no small number of instances the older man's experience and good judgment was sacrificed through a desire for speed, while the younger man, not as fast, seemed in many cases lacking in surgical judgment and a clear knowledge of the work at hand.

In the case of the specialist, there was not only a marked difference in the operation itself, but in the preparation of the patient as well. In every instance the patient was sub-

*This paper is a resume of impressions gained on a recent trip of observation and study.

jected to various laboratory tests and, when deemed necessary, a more or less prolnged pre-operative treatment given. Such care is noticeable in the patient himself before and after operation. The patient is a better operative risk, and there is less chance of death following or of a stormy period of convalescence. The difference in time alone and in the comfort of the patient more than compensates for the time of preparation, to say nothing of the end results of the operation.

In kidney cases a most notable difference was seen in the incisions made by the general surgeon and those by the specialist. In the latter case the incisions were always longer and freer, the advantage being in the ease of handling the organ itself, and the lessened manipulation necessary to effect whatever surgical procedures that seemed indicated. This is a decided factor in the reduction of both hemorrhages and infections. In some cases of renal calculi, operative judgment seemed sadly lacking. In one case I saw a general surgeon attempt to operate through an incision that was entirely inadequate, and what amounted to a failure to deliver the kidney. He then bisected the kidney for the removal of several large stones, and afterwards closed the kidney wound with an ordinary running suture which failed to hold, and in a short time the continued hemorrhage made re-operation necessary. In spite of several transfusions the patient was dead four days after the original operation. The worst feature of this case lay in the fact that the kidney was to all intents and purposes functionless; and the proper thing to do would be either to remove the kidney or else let it alone. This case is, of course, extreme, and it is unbelievable that any such series of blunders could be made by one who had any knowledge of urological surgery; and would be impossible in the hands of a competent urologist. In this instance, the surgeon could not be described as an inexperienced man.

The bladder cases, with the exception of a few procedures, were left entirely to the urologist, for the skill, consideration and judgment, combined with the tediousness of the work itself, would be well beyond the average surgeon's desire because of the necessary careful and correct procedures.

In prostatic cases the urologist seemed more willing to use either the perineal or suprapubic approach depending upon the case in hand. As in the kidney cases, the pre-operative handling was much better and the operations themselves cleaner. The general surgeon usually takes less time than the urologist. A marked decrease in mortality has occurred in these cases due to the use of local and regional (including spinal) anesthesia, and too much cannot be said of the many advantages offered by this in most of these cases.

The hernia operations are too well known to require much comment. The urologist takes bigger bites of the conjoined tendon and a more careful inclusion of Gimbernat's ligament in the lower suture.

In operations upon the external genitals, the specialist was more deliberate and careful, the general technic and type of operations selected being the same as that of the general surgeon.

In conclusion, it would seem that the urologist, while slow, was more deliberate and appeared to have the better of it in operative work; and it would be happier if the general surgeon could achieve more of a urological viewpoint in these cases.

1422 *Massachusetts Avenue.*

ADDITIONAL REMARKS ON RETIREMENT.

By I. S. STONE, M. D., F. R. C. S., Washington, D. C.

In a former paper I have given a brief account of what I have found interesting and agreeable as a pastime in view of my retirement a few years ago (see *Virginia Medical Monthly*, July, 1927). In the present article I wish to consider the general subject of retirement for business and professional men.

One of the frank opinions by recent writers is that of Mr. Edward Bok, who strongly favors retirement before mental and physical impairment begins. Mr. Bok has had a very active literary and business life, and many will remember that he paid fifty thousand dollars for a suggestion of the best methods of preventing war. His paper, from which I quote, will be found in the *Atlantic Monthly*, Vol. 126, p. 369. He said he "wanted to stop work and play for a while." His advice appears to be applicable alike to business and professional men, and I shall quote liberally from it.

His friends thought he must be ill, because he "wanted to play." He did not object to dropping with the "harness on," but preferred

to drop "with the blinders off." One friend gave him twelve months to degenerate. Another suggested that he "would have a complete mental collapse in two years." But, he says, "The great adventure of life is something more than work—and money. One of the most pathetic signs . . . is the inability of some men to let go, not only for their own good, but to give the man behind them a chance. They hang on because they think themselves indispensable to their business, while in scores of cases the truth is exactly the opposite; the business would be distinctly benefited by their retirement and the coming to the front of the younger blood in affairs. Many are afraid to let go, fearing they would not know what to do. At fifty or seventy, they are slaves to business with no inner resources. One may thus be useless to himself and a burden to himself and family. Life is more than making money or the accumulation of wealth. Those who miss this truth miss the greater part of joy and satisfaction that can come into life."

Anyone familiar with the writings and the life-work of Mr. Bok may easily see that, although he calls his *after*-retirement activities "play," most of us would be weary enough and would want to return to "work" rather than follow his lead in "play." It will be interesting to hear from him a few years hence, for he will surely report his experiences.

The question of retirement comes ruthlessly and relentlessly upon one who, having given his best years to professional life, finds himself less efficiently productive, either in financial returns or in personal influence. This ruthlessness appears the more distressing and uncharitable when we realize that probably one-half of his time and labor has been for the poor or for those who refused to pay him for his skill and attention. It seems all the more serious to those who, approaching retirement, have not the "inner resources" which Mr. Bok mentions.

A retirement age for physicians has not yet been definitely fixed, save in certain institutions, such as hospitals, but there is a strong tendency toward this measure, which will develop greater strength in the future. Dr. Osler's famous allusion* to the retirement of medical men before they reach old age, is so well known that I forbear quoting it, yet we must admit that he made good use of the psychological moment when he gave utterance to his opinion. Since Osler's day, no one has been bold enough to express a similar view, whatever they may have thought about it.

Beyond doubt this question of the retirement of physicians on account of age, is a modern one and has been brought about by the various movements looking toward better medical schools and hospitals and standardization of equipment for all those who labor for the best interests of the public and medical profession, and the prolongation of human life.

A future paper may refer to retirement from the viewpoint of the hospital and medical school.

1618 *Rhode Island Avenue, Northwest.*

*See: "The Fixed Period" in "Aequanimitas," p. 391, especially pp. 399-400.

Clinical Reports

A CASE OF DECOMPENSATING RHEUMATIC HEART:

Compensation Restored With a Loss of Forty-five Pounds of Dropsical Fluid in Twenty-four Hospital Days.

By ALEXANDER G. BROWN, Jr., M. D., Richmond, Va.
Stuart Circle Hospital.

A white woman, aged fifty-six, was admitted to the hospital May 20, 1927, weighing 190 pounds, complaining of shortness of breath, swollen legs, arms, abdomen, and face. The patient had had rheumatism after her marriage. This followed attacks of tonsillitis. Seven years before entering the hospital she had had some dropsy. She was told by her physician that she had a "rheumatic heart." Since last Christmas (1926) she has had more or less swelling in various parts of her body. She has been under the care of several physicians, but there has been a persistence of dropsy. A few weeks prior to entering the hospital, the dropsical symptoms had become very difficult and uncomfortable.

The patient was a large woman. She showed a swollen body; and there was a manifest difficulty in breathing. She was pale and weak, and quite miserable. Examination of the heart disclosed evidence of labored action, enlargement, dilatation and valvular disease. The heart was markedly enlarged and dilated, and was rapid in rate, intermittent and irregular. There were systolic and diastolic murmurs over the precordium and jugular pulsations. The

auricles were fibrillating. The diagnosis arrived at was regurgitation of the aortic and mitral valves, with dilatation of heart, and decompensation.

Moist rales were present at the bases of the lungs, with moisture on both lungs. There was demonstrable an accumulation of dropsical fluid in both pleural sacs. The abdominal cavity showed an accumulation of dropsical fluid. There was a marked edema in the abdominal walls, legs, arms, and face. The liver was enlarged. The patient gave a history of almost complete suspension of urine for thirty-six hours before entering the hospital. In general, the patient was swollen, cyanotic, and dyspnoeic.

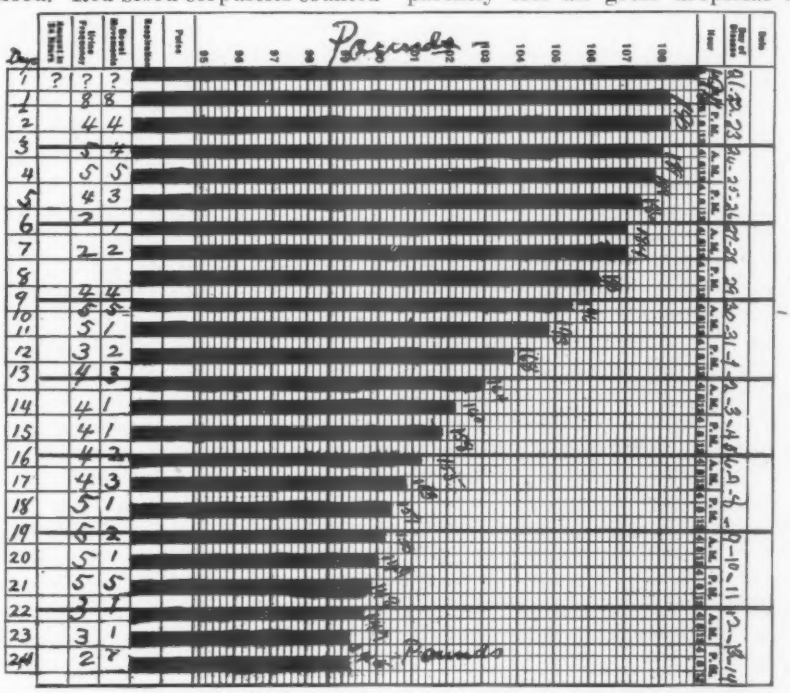
Laboratory findings may be briefly summarized. There was a trace of albumin in the urine; one to three pus cells and many epithelial cells. The blood urea was 20 mg. per 100 c.c. of blood. Red blood corpuscles counted 3,390,000, and the hemoglobin was 66 per cent. Blood Wassermann was negative.

The patient was kept in bed in hospital. She was restricted to 300 c.c. of fluid intake daily. She was given a low protein diet with a low maintenance caloric value. She was restricted in the use of salt. She was given a grain and a half digifolin tablet every four hours for first two days, then one tablet every six hours. She was also given theobromin sodium salicylate in eight grain doses every twelve hours. A mild "saline" water was given at night.

Upon this regimen and medication, the patient made steady loss of fluid. The losses may be observed in following notations:

Weight in Pounds		Weight in Pounds	
194—	1st day	164—	13th day
190—	2nd "	160—	14th "
190—	3rd "	158—	15th "
189—	4th "	155—	16th "
188—	5th "	153—	17th "
186—	6th "	151—	18th "
184—	7th "	150—	19th "
184—	8th "	149—	20th "
180—	9th "	148—	21st "
176—	10th "	147—	22nd "
173—	11th "	145—	23rd "
168—	12th "		

She was discharged from hospitalization on the twenty-fourth day (6/15/27), having apparently lost all gross dropsical fluid. Her loss of weight was accompanied by an increased urine output. She left the hospital much improved. Heart diameter was reduced. The heart rate and rhythm were more normal, and compensation apparently was re-established. Lungs were clear, liver was more normal in size and kidney secretion was ample.



Comment

Dropsy is always difficult. In no case is it more difficult than in heart disease. It usually portends terminal conditions; it admonishes one of approaching heart failure; it means collection of fluid in tissues and cavities before death unless a turn of the tide is brought about by clinical methods. It has not only this significant meaning, both to patient and physician, but also it brings about a group of symptoms which adds to the discomfort of an already harassed patient. Hence, dropsy and edema may be briefly considered as one large clinical problem in the management of the cardiopath. There are three types of edema. Inflammatory edema is one in which the fluid saturates the cells, but does not shift with gravity or position. With this type, of course, we are not dealing. Then there is edema of the nephritic. In this type fluid is suspended in subcutaneous tissue. It readily moves and shifts its position. In this form there is an increase of water in the blood and an increase of sodium chloride. Lastly, there is cardiac edema. This is hypostatic. There is not that change of the relative amount of water and sodium chloride in the blood. However, there are frequently combinations of the cardiac and nephritic forms of edema. This is due to the frequent association of nephritic disease with heart disease. This relation or association has a significance of paramount importance to the clinician, because upon its determination rests the line of therapeutic approach.

Recent reports upon the question of relieving edema in nephritic and heart cases have afforded encouragement. For instance, the current publications of the past two years have pointed out the favorable effect of the use of ammonium chloride and novasurol in nephritic edema. Of course, a dietary consideration was also given, as low salt, and low protein diet, and a limited water intake, were combined in the treatment. The experience of Keith, Barrier and Whelan, (*J. A. M. A.*, 1925, xxxv, 799-806) is interesting and gives the results of a careful observation of twelve cases of nephritic edema treated with ammonium chloride and novasurol. The latter was injected intramuscularly and intravenously in doses of from 0.2 to 2.55 c.c. Diuresis was best obtained when ammonium chloride had preceded the administration of novasurol. In all the cases marked diuresis and loss of edema was secured. These observations are in keeping with our experience with this treatment. The importance of a limited fluid intake and a low diet of salt and protein is of equal significance. In some of our cases a mere limiting of water, salt and protein, has been followed by a gradual loss of edema without medication. In these cases renal function has improved and nitrogen retention has decreased as the edema was lost. Edema of heart disease in which we are interested in this case report, has been recently well considered in an article by Marvin, *J. A. M. A.*, Vol. 87, No. 25, page 2043. Marvin treated the subject under the title, "The Value of the Xanthine Diuretics in Congestive Heart Failure".

Under the use of xanthine diuretics, seventy-seven cases of congestive heart failure were observed, but thirty-six were made edema free by digitalis alone, while of the remaining forty-one, thirteen were relieved of edema by one or more of the xanthine diuretics, five were improved, and five only moderately benefited. The remainder of the cases were benefited by the diuresis secured.

1135 *West Franklin Street.*

TWO CASES OF NEPHRITIS APPARENTLY CURED BY TONSILLECTOMY.*

By B. M. RANDOLPH, M. D., Washington, D. C.
Professor of Clinical Medicine in George Washington University.

In modern times it is in the laboratory that the preliminary research is done which makes possible any really effective advance in the treatment of disease. A very conspicuous exception to this rule is the hypothesis that focal infection is the cause of pathological change in remote structures. The only thing that maintains this hypothesis is the empirical fact that surgical removal of such foci are followed by the cure of the signs and symptoms of disease attributed to them. The laboratory has lagged behind the clinic in furnishing a scientific thesis by which we can control our clinical impressions. It is to be hoped that the extensive study of this problem which is going on in the various laboratories of the world may soon open a line of approach, which will supply a more scientific conception than the present clinical guess and therapeutic test.

The case here reported is that of:

A white male, referred by Dr. Whitson, for study and advice. First seen June 25, 1921. Aged 38; machinist; married.

*Read before the George Washington Medical Society, February, 1927.

Present illness began May 8, 1921, approximately seven weeks before this visit. In the morning he had three chills and a very sore throat. There was some fever, which lasted three or four days. Had severe abdominal pains, which confined him to bed two weeks. During this time he had some vomiting. He still has nausea, which is worse in the evening, and occasional headache.

Blood appeared in his urine a few days after the onset, and has persisted since. He was examined by a genito-urinary surgeon, who found no local infection, and told him that the blood came from both kidneys. Ten days before the onset he was struck in the right side and knocked from a train. He is very constipated, and the urine is frequent and profuse.

Family History. Father died at 60 of prostatic cancer. Mother living and in good health. Has eleven brothers and sisters, all in good health. His wife is healthy, and has had no children or pregnancies.

Personal History. Had a chancre at 18 years, and was subsequently successfully treated for lues by his family physician. Operations: herniotomy in 1908; appendectomy in 1909; eye removed for acute glaucoma in 1913. Had quinsy in 1912.

Examination. Anæmic appearance. Swelling under eyes. Second right upper and first right lower bicuspids crowned. Throat is not acutely inflamed, and there is no adenitis. Thyroid is full, but does not appear pathological. Heart, lungs and abdomen negative. No abnormal reflexes found. Blood pressure 148-88. Weight 144 lbs.

Urine. Acid; specific gravity 1.010; albumen—a marked positive reaction; numerous granular and epithelial casts; also red cells and leucocytes.

Diagnosis. Acute nephritis, now becoming chronic.

He was advised to enter the hospital for further observation and treatment, and was admitted to George Washingtoin University Hospital June 28, 1921.

It was further noted that since April 1, 1921, he had been having vague digestive disturbances, with a choking sensation, which were relieved by eating. Also, that on January 13, 1921, he passed an unquestioned examination for life insurance, and was issued a policy for $3,000 by a standard life insurance company. Has had three negative Wassermanns since treatment of lues.

Prior to his admission to the hospital, blood examination was reported as follows: Hb. 60%; red cells 3,300,000; white cells 15,000; polymorphonuclears 62%; mononuclears 4%; lymphocytes 32%; basophiles 1%; eosinophiles 1%. Some achromia; moderate anisocytosis; no other abnormality.

Tonsil Culture. Streptococcus hemolyticus and streptococcus viridans in large numbers and in about equal proportion.

The temperature on admission was 99°, and, except for a mild and transient febrile reaction following tonsillectomy, it did not go higher during his stay in the hospital. No abnormal acceleration of pulse or respiration.

Examination showed pus in tonsils, and their removal was advised as soon as the general condition should permit.

Treatment. At the outset he was placed on a diet of 800 c.c. of skimmed milk, and water as desired.

June 30. Diffuse patchy urticarial eruption, itching intensely. He attributes it to milk. Milk discontinued and a protein free mixed diet substituted.

July 3. Much better; rash almost completely gone; puffiness under the eyes has disappeared, and there is no edema of the ankles. Sleeps well.

July 4. Continues to improve subjectively; urine less frequent.

July 18. Improvement has continued and he is permitted to sit up and walk about ward.

July 26. Tonsillectomy under novocaine anesthesia by Dr. Tibbetts. Normal course and recovery.

Laboratory Studies. During his stay in the hospital, nineteen urine examinations were recorded. The quantity approximated 2,000 c.c. Fresh specimens were always acid. Specific gravity was usually about 1.010. After operation 1.010 to 1.015; the day before discharge 1.020. Albumen, a faint trace to a large amount, present in all specimens examined except one. Amount lessened distinctly after operation. None the day before discharge. Casts, hyaline, granular, or both, were reported in ten examinations. Red cells, occasional to many, occurred in five reports. Occasional red cells but no casts on the day before discharge.

Blood Chemistry. (By Dr. Ralph E. Myers).

June 28. Urea nitrogen 21.5 mg.; non-protein nitrogen 61.5 mg.; chlorides 550 mg.

July 5. Urea nitrogen 24 mg. per 100 c.c.; non-protein nitrogen 55 mg.; chlorides 495 mg.

July 14. Urea nitrogen 16; non-protein nitrogen 48 mg.

July 25. Urea nitrogen 21; non-protein nitrogen 59 mg.

Patient was discharged improved August 4, 1921.

Subsequent office visits as follows:

September 13, 1921. While at work felt pain in right hip. Sometimes it is referred to testicle. Weight 161¾ lbs. Normal patellar reflexes. Throat shows good healing. Appetite good; bowels regular; no indigestion or headache. Hb. 80%. Urine—acid; sp. gr. 1.015; a faint trace of albumen; very occasional red cells; no casts. Iodide of iron, which he had been taking since leaving the hospital, was now discontinued, and sodium iodide was prescribed in increasing doses. This was with the idea that the pain complained of might be a luetic phenomenon.

Sept. 23, 1921. Weight 163 lbs. Hb. 85%. Urine—acid; sp. gr. 1012; albumen—a slight increase. Symptoms of iodism present, and dose reduced. Spermatic cord is thickened. A suspensory for testicles prescribed, after which this symptom disappeared.

Sept. 30, 1921. Weight 165 lbs. Urine—albumen negative. A few red cells, hyaline and hyalo-epithelial casts. Iodide discontinued.

Oct. 7, 1921. Urine—acid; sp. gr. 1.010; albumen and sugar negative; occasional red cell and one epithelial cast seen in centrifuged specimen. Weight 163½ lbs. Condition otherwise unchanged.

Oct. 21, 1921. Pains in abdomen. Urine—sp. gr. 1.025; albumen positive; red cells more numerous and occasional hyaline cast.

Nov. 25, 1921. Urine—acid; sp. gr. 1.016; albumen negative; occasional red cell; no casts. Hb. 75%. Weight 168½ lbs. Improved. Since last visit has arranged for help which lessened his work and exposure.

Dec. 1, 1921. His work as a machinist entails his becoming overheated, and making sudden changes from heated shops to out-of-doors. He finds he is much more sensitive to chilling than formerly. He has now arranged to take my advice, and is leaving for Florida forthwith.

I lost sight of him but within the past year Dr. Tibbetts told me that this patient had consulted him for a mild acute sinus infection, and reported himself as otherwise well. About February 1, 1927, I was called up concerning him by a physician who had recently examined him for insurance, and who told me that his examination showed no disability. This led to my looking him up and making an appointment with him for re-examination.

He reported February 6th. Upon leaving Washington, in 1921, he went to Florida, as advised, and remained there a year or more. During this time he kept on a vegetarian diet, except that he ate freely of sea-food. He improved steadily, gaining in weight and strength, and entirely lost the sensitiveness to chilling that he had had. He left Florida to accept a position in an electrical plant in Erie, Pa., where he remained two years. The change of climate, with long severe winters did not affect him unfavorably, but seemed rather to benefit him than otherwise. He returned to Washington in 1924, and has been perfectly well here ever since.

He weighs 180 pounds, eats everything he desires, and looks ruddy and robust. Blood pressure 134 systolic; 76 diastolic. *Urine*—Amber, clear; sp. gr. 1.018; an extremely faint trace of albumen and a very occasional hyaline cast; otherwise normal. *Blood*—Dextrose 93 mg. per 100 c.c.; urea nitrogen 15 mg.; chlorides 490 mg.

He was declined by the life insurance company on the basis of the history of nephritis.

Case II.—In 1921, a pupil nurse in the George Washington Hospital Training School, while on temporary duty in another hospital, contracted scarlet fever. The infection appeared to be a mild one, the fever and eruption being of short duration. While still in bed, and on a limited diet, she abruptly developed acute nephritis with complete suppression of urine for nearly 24 hours. She recovered from the acute phase, but was left with a chronic albuminuria and cylindruria, which persisted over more than a year that she remained under my care. At the same time she had a rather severe secondary anæmia, the hemoglobin reading as low as 55%. She had at this time chronic purulent infection of the tonsils.

I did not at that time have the benefit of the knowledge that has since been reached as to the etiology of scarlet fever. However, I had a very definite opinion as to the role of focal

infection in the etiology of certain types of nephritis. It seemed to me that the dreaded post-scarlatinal nephritis might be due to the access of virulence of the streptococci already in the tonsils through the synergism of the scarlet fever. On the basis of this hypothesis, it seemed rational to try to cut off the toxin supply, and, with this idea in view, I advised tonsillectomy in this case. Dr. Breeding removed her tonsils September 8, 1922.

During the short time after the operation that she was under my care, the albumen persisted. After a short rest, she took up work in a physician's office, and later went back to professional case nursing, and has continued doing so since. I have seen her recently, and she appears well and says she is, except that she cannot stand a great deal of strain.

Urine—Amber, clear; acid; sp. gr. 1.010; no albumen, casts, or other pathological findings.

Blood—Dextrose 79 mg. per 100 c.c. Urea nitrogen 11 mg.

Hemoglobin 75%+; red calls 3,580,000; leucocytes no increase.

These cases seem to strengthen the hypothesis that there is an etiological relationship between focal infection and certain types of renal disease. Of course, advanced cases of nephritis cannot be expected to benefit by the surgery of focal infection. It does, however, seem proper in early cases, where there is an active focus of infection present to remove the infected focus with a view to arresting the progress of the renal lesion, if not to effect a cure.

1339 *H Street, Northwest.*

A CASE OF SERUM SICKNESS FOLLOWING DIPHTHERIA TOXIN-ANTITOXIN.

By BLANTON P. SEWARD, M. D., Richmond, Va.
Associate in Medicine, Medical College of Virginia.

This case of serum sickness is reported because of the rarity of occurrence of reactions following the injection of toxin-antitoxin. With the care used in preparing the toxin-antitoxin mixture, and the widespread use of this means of immunizing against diphtheria, the number of reactions is almost negligible. In Richmond 3,400 children received the complete treatment last year. The City Health Department has no recorded reactions, though a few of the children had sore arms for several hours. Reports from other cities, where much larger series of children were given toxin-antitoxin and every possible means taken for checking the reactions, show very few cases of reactions.

Park and Zingher found a large number of local and constitutional reactions when the old preparations containing 3 to 6 L+ doses of toxin were used. In contrast to this, the local effects of the injection were sometimes slower in appearing and more lasting, though there were practically no constitutional reactions to the new type of mixture which contained .1 L+ dose of toxin.

The toxin-antitoxin mixture used at present contains .1 L+ dose of toxin. The amount of horse serum has been so greatly reduced that there does not seem to be sufficient quantity of the serum to cause an appreciable reaction except in extremely susceptible persons. The reactions are said to be due to the protein contents derived from the culture media. Bauer and Wilmer, writing from Phaladelphia in March, 1926, stated that they had given toxin-antitoxin treatments to children who reacted positively to horse serum, some of them asthmatics, without getting any reaction from the toxin-antitoxin.

Park and his associates found that reactions in infants are negligible; slight and infrequent in young children from six months to three years of age, the period when immunization is most necessary; rather severe in perhaps 10 per cent of older children, and moderate or severe in a larger percentage of adults. Thus, as an individual grows older the chances for a reaction are increased. The experience of other Public Health workers accords with this report. Park also stated that persons showing pseudo-reactions to the Shick test give the most severe reactions to toxin-antitoxin injections, though some who give no pseudo-reaction to the Shick test react moderately severely to toxin-antitoxin. Bauer and Wilmer, however, state that pseudo-reactions are of no significance from the standpoint of constitutional reaction to toxin-antitoxin.

In the case herein reported, no Shick test was made. To what extent the first dose of toxin-antitoxin sensitized this patient we do not know. The arm was sore for several hours after the injection but probably not more so than is seen in other cases. We do not regard a sore arm as a reaction any more than when it occurs after other injections. Although this child gives no history of asthma or susceptibility to proteins, she may react to

some of the protein tests. We are inclined to believe that the first injection produced some sensitization, and the second brought about further sensitization which manifested itself in the manner described. The local and constitutional effects, followed by an urticarial eruption conform to the type of severe reaction reported by others. That the reaction was serum sickness rather than an anaphylactic shock is evidenced by the time and manner of its appearance.

The development of a reaction does not preclude the possibility of diphtheria occurring later, though the patient may receive some degree of immunity from the toxin-antitoxin. Should it become necessary at any time to administer antitoxin or any other serum, it would probably be safe to do so by beginning with small doses.

Katherine T., white, nine years of age, was seen on February 25, 1927. She had received a dose, the second of diphtheria toxin-antitoxin at school on February 23. A few hours following the injection the arm became quite sore. On the following day the arm was swollen and more painful, the pain extending into the shoulder. The child felt too badly to go to school. On the second day the arm was more swollen and painful; there was a languid feeling and nausea at intervals. About three o'clock in the afternoon the sole of the right foot began to itch; the mother looking at it observed a white, elevated area which she thought was due to an insect bite. During the next six hours the child grew worse, was nauseated constantly, and had some abdominal pains which were probably due to a purgative given by the mother about the middle of the day. An eruption appeared around the lips, on the right side of the body and on the leg. The skin itched intensely. When speaking, she could not articulate distinctly.

Nothing else of significance in the present or past history was obtained except that she was treated about one year ago for a "run down" condition by a physician.

On examination the child's lips were edematous; a brilliant red erythematous eruption surrounded the lips, covered the entire right arm almost to the wrist, with scattered areas on the chest anteriorly and posteriorly, and on the abdomen and thigh. On the right wrist three small wheals were seen, two giant wheals on the outer and inner aspects of the thigh extending into the groin, and several small ones on the ankle and sole of the foot were very distinct.

The tongue was considerably thickened; the pharynx showed a mild generalized congestion, and pus was expressed from the tonsils. The nose showed moderate congestion. The cervical glands were enlarged.

Lungs: a clear, puerile type of breathing was heard. The heart rate was 130; the quality of the sounds was good.

Abdomen: there was moderate generalized tenderness.

Temperature, 100.2.

The case was recognized as one of serum sickness following the injection of toxin-antitoxin, and treatment was instituted.

During the following twelve hours the condition of the child was worse, and the eruption spread over a large part of the body. Twenty-four hours after the first visit, the child was still very uncomfortable, the greatest discomfort being due to the intense itching of the skin. At this time there was a generalized redness, less brilliant in color, from the forehead to the feet. The tongue was less edematous, and the child could speak more distinctly. The throat showed less congestion. The heart rate was 108, and the lungs clear.

At the third visit, forty hours after the first, the skin was entirely clear except for a few scattered, circular rings which surrounded the site of the wheals. The tongue was normal in appearance, and the patient felt well. Five days later the child was playing with other children.

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Stuart Circle Hospital.

STREPTOTHRIX CONCRETION OF CANALICULUS—WITH REPORT OF CASE.*

By CHARLES A. YOUNUG, M. D., Roanoke, Va.

There has been considerable confusion in the classification of this organism, having at dif-

*Read before the eighth annual meeting of the Virginia Society of Oto-Laryngology and Ophthalmology, at Charlottesville, Va., April 30, 1927.

ferent times been termed Leptothrix, Streptothrix, Streptothrix forsteri and Nocardia.

Jordan[1] gives the following classification of the pathogenic Trichomycetes which stands in an intermediate position between the bacteria and the higher fungi:

Trichomycetes
- 1—Leptothrix.
- 2—Cladothrix.
- 3—Nocardia (sometimes termed Streptothrix, a name also applied by some writers to the whole group of Trichomycetes. According to the rules of botanic nomenclature, however, since the name Streptothrix was preempted in 1839 for a mold belonging to the Damatiaceae, it is not applicable to any of the organisms under consideration.
- 4—Actinomyces.

Shumway,[2] in 1921, reported two cases, and found only sixty-eight recorded cases in the literature. The first clinical description of this condition was that of Albrecht Von Graefe in 1854, who proved that the concretions were of an organic nature.

Twelve additional cases have since been reported.

Ferdinand,[3] three cases, all in the lower canaliculus; Raynant,[4] three cases, Francke,[5] two cases, one in the upper and the other in the lower canaliculus; Fava,[6] one case; Ginsberg[7] reports one case; Ostroumoff[8] reports one case in the lower canaliculus. The observation that streptothrix infection of the canaliculi occurs most frequently in women led Feigenbaum[9] to think that the organism might have been transmitted from the vagina. Search of the vaginal flora in these cases was, however, negative. Parker[10] reports one case with involvement of upper canaliculus.

Report of Case

Miss M. B. C., white, thirty-six years of age, referred December 31, 1926, complained of tearing of left eye also a growth in the lower left lid. Condition began eight years ago with tearing. Some months later, she noticed slight swelling of the lower left lid, which has gradually grown larger. The growth has never been painful, and patient has never been able to squeeze out the contents. Has noticed a slightly offensive odor of the tears. Neither the eye nor eye-lids have ever been inflamed.

Examination showed the right eye to be normal—as was the left, with the exception of a firm tumor about 5 m.m. in diameter in the region of the lower left canaliculus. The tissues about the tumor showed no signs of inflammation, nor was there any tenderness to pressure in this region. Pressure over the lachrymal sac caused no regurgitation. The lower lid had two openings, each of which appeared to be a normal punctum. The puncta were 3 m.m. apart, the external punctum being directly under the upper punctum, and the accessory punctum 3 m.m. internal to the normally placed punctum.

Treatment

With a probe pointed lachrymal knife, the two puncta were connected by incising the intervening tissue, leaving a slit 3 m.m. in length through which the concretion was removed piece-meal with a small curette. The lining membrane of the canaliculus was then swabbed with a 3 per cent solution tincture of iodine.

The concretion was brownish in color, granular in appearance, and had a slightly offensive odor. Suspecting this to be a Streptothrix infection, two unstained slides were sent to the Hygienic Laboratory, Washington, D. C. Their report follows:

"Diagnosis—Streptothrix. Smears show long strands which are Gram negative and contain rows of Gram positive granules. What appears to be true branching is seen in places. The findings are not inconsistent with a Streptothrix."

No cultures were obtained. Patient was last seen three months after removal of the concretion, at which time the left eye was functionally normal, and, with the exception of the 3 m.m. slit present in lower canaliculus, the lids showed no signs of the previous infection.

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Sir James Y. Simpson.

Simpson (Sir James Young) [1811-70]. Works of . . . 3 v. 8°. *Edinburgh, A. & C. Black*, 1871-2. v. 2. Anesthesia, hospitalism, hermaphroditism, and a proposal to stamp out small-pox and other contagious diseases, edited by W. G. Simpson.

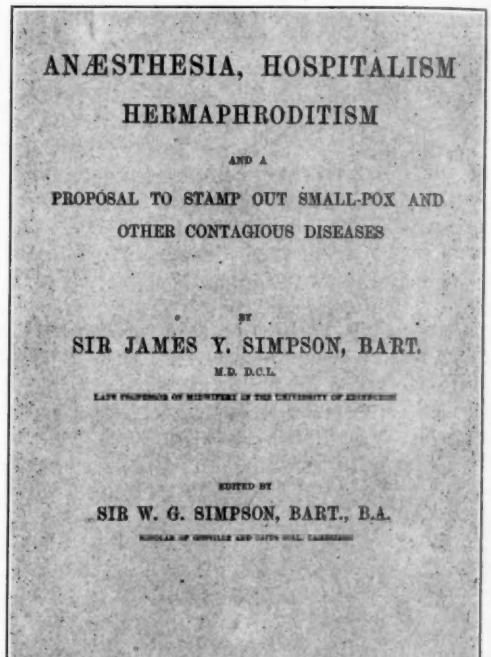
For Biography, see Simpson (Eva B.) Sir James Y. Simpson. 8°. *London & Edinburgh*, 1896.

For Portrait, see Richmond & Louisville M. J. 1870, ix.

Sir James Y. Simpson is generally recognized as the father of obstetric anesthesia. On January, 1847, he performed a version on a patient with a contracted pelvis, under ether anesthesia. By November of the same year he was using ether routinely in both natural and morbid parturition. While Simpson was enthusiastic over anesthesia he was not entirely satisfied with the anesthetic agent. He experimented on himself and his friends with a number of volatile substances, finally selecting chloroform as a more suitable agent. In 1848 he was using chloroform almost exclusively, and it was largely due to his influence that chloroform supplanted the older anesthetic so completely in obstetrics and even in surgery in the British Isles and on the Continent. It should be remembered that conditions were much less favorable for the use of ether eighty years ago. Most of the work was done in the home and heating and lighting required an open flame. The operations were quickly performed and the anesthetic pushed only to the point of insensibility to pain. (See Dabney's Life and Campaigns of Lieut.-Gen. Thomas J. Jackson, *New York*, 1866, p. 695). No wonder then that the superior pleasantness, convenience, and non-explosiveness of chloroform made it the more popular agent.

Sir James Y. Simpson was not only interested in inhalation anesthesia, but performed many experiments on himself, his pupils, and on lower animals in attempts to produce local anesthesia.

In 1871, one year after his father's death, Sir W. G. Simpson arranged the papers, letters, controversies and lecture notes upon


ANÆSTHESIA, HOSPITALISM

HERMAPHRODITISM

AND A

PROPOSAL TO STAMP OUT SMALL-POX AND OTHER CONTAGIOUS DISEASES

BY

SIR JAMES Y. SIMPSON, BART.

M.D. D.C.L.

LATE PROFESSOR OF MIDWIFERY IN THE UNIVERSITY OF EDINBURGH

EDITED BY

SIR W. G. SIMPSON, BART., B.A.

FELLOW OF GONVILLE AND CAIUS COLL. CAMBRIDGE

EDINBURGH

ADAM AND CHARLES BLACK

1871

(The right of translation reserved.)

Reproduction of title page of Dr. Simpson's book, "Anesthesia Hospitalism, Hermaphroditism."

Anesthesia, Hospitalism, etc., in logical order and published them in a convenient form. This volume contains the interesting controversy between Sir James and Dr. Jacob Bigelow as to the priority claims of Edinburgh and Boston, besides many answers to religious and other objections to the use of anesthetics in midwifery and surgery. His letter to Professor Meigs of Philadelphia is especially elabo-

rate and painstaking. There is also a good introductory chapter on the history of anesthesia, particularly from the standpoint of the obstetrician. This collection of papers gives one an excellent idea of the almost unbelievable opposition of the profession and the public to such a humane practice.

That Dr. Simpson approached the subject as a careful scientist as well as controversialist is shown by the following extract from his first paper on anesthesia (*Edinburgh Monthly J. of M. Sc.* March, 1847). "A careful collection of cautious and accurate observations will no doubt be required, before the inhalation of sulphuric ether is adopted to any great extent in the practice of midwifery. It will be necessary to ascertain its precise effects, both upon the action of the uterus, and of the assistant abdominal muscles; its influence, if any, upon the child; whether it gives a tendency to hemorrhage or other complications; the contra-indications peculiar to its use; the most certain modes of exhibiting it; the length of time it may be employed, etc."

James Young Simpson was born precipitately in Bathgate, Scotland, June 7, 1811, the eighth child of the village baker. He entered school at four years and his aptness and good memory was so remarkable that his family decided that James should be their student and that they would invest their earnings in his education. At fourteen years he entered the Art Classes of Edinburgh University and, before he was out of his teens, he passed his "final" in Medicine. "His extreme youth prevented his taking his diploma at once and becoming M. D." His brothers gave him funds for a foreign tour, and he spent three months visiting various hospitals in London and across the Channel. In 1838 he became lecturer in obstetric medicine in the Extra-Academical School, and in 1839 he succeeded Dr. Hamilton to the Chair of Midwifery. In 1847 he was appointed one of her Majesty's physicians in Scotland, the first of a long list of honors that culminated in a baronetcy in 1866. "Foreign countries had showered their honours on him till their list swelled into pages; but after his name he usually wrote only M. D. and the D. C. L. degree he got from Oxford".

In appearance he is usually described as a big little man with a pleasing voice and laughing eyes. Gerald Massey said he had a head of Jove on the body of Bacchus. A contemporary said that he crowded into every year three times as much research as a very industrious man could manage, ten times as much controversy, and twice as much practice. His writings indicate a wide range of interest,—obstetrics and gynecology, surgery, medicine, preventive medicine, hospital construction, and archaeology. Yet, busy as he was, he never lost an opportunity to play with children and was noted for the apt little nicknames he gave his young comrades.

M. P. R.

Correspondence

Ephedra and Ephedrine Not New Pharmaceuticals.

Richmond, Va.,
August 22, 1927.

To the Editor:

Your editorial upon ephedrin in the August issue of the Monthly, and most other literature upon the subject, call forth the idea that that alkaloid had its first production but recently, and that its sole source is the plant *mahuang*, which has been used by the Chinese for a thousand years, it is said.

I do not know how long the same or a similar plant has been known and used in this country, but, in view of the constantly increasing use of ephedrin and because of the idea that the agent is a production of the past two or three years only, it occurred to me that the readers of the Monthly may be interested in some facts with regard to ephedra and ephedrine to which my attention was accidentally directed a few weeks ago. In looking over Dorland's *Medical Dictionary*, edition of 1911, I found ephedra, the plant, and ephedrine, the alkaloid, are described as follows:

Ephedra (ef′ ed-rah) [Gr. *epi* upon + *edra* seat]. A genus of gnetaceous plants. *E. antisyphilitica*, *E. vulgaris*, and others are used in syphilis, rheumatism, and diseases of the bladder.

Ephedrine (ef′ ed-rin). An amorphous medicinal preparation of ephedra. 2. An alkaloid of the same: its chlorid is mydriatic. **e. homatropin**, a compound of ephedrin hydrochlorate, 1 part; homatropin hydrochlorate, 1-100 part; water, 10 parts: a good mydriatic.

The claim of novelty being thus refuted, an older work was sought in the endeavor to discover if the drug were known before 1911, and in Merck's 1907 *Index* this was found:

Ephedra (Cay Note; Canutillo; Whore-house Tea; Tapote; Teamster's Tea). Lvs. & branches of Ephedra nevadensis S. Wats. (E. antisyphilitica, C A. Meyer) Gnetaceae.—*Habit.:* U. S. (Calif.;

Nevada).—*Etymol.:* Fr. Grk. "epi," upon, & "edra," seat, *i. e.*, the plant climbs & grows upon rocks.—*Constit.:* Ephedrin (a glucosidal tannin).—Antisyph.; Astring.—*Uses:* Gonorrh.—*Dose* 30-120 grains (2-8 Gm.) in powd., fld. extr., or infus.

Ephedrine. Alkaloid fr. lvs. of Ephedra helvetica, C. A. Meyer, Gnetaceae.—. . . . Colorless cryst.—*Sol.* A., E., C., W.—Mydriatic.

Ephedrine Hydrochloride Merck . . . Wh. need. —Sol. W., A.— . . . Mydr.—*Uses:* One to two drops of 10% aqu. solut. in eye, inst. of atropine or homatropine.—No irritation or disturb. of accommodation.

Then follow Ephedrine (Pseudo-) Merck, an alkaloid from Ephedra vulgaris; and its hydrochloride, having the same physiologic action as the first two, respectively, except it is stated in addition that the pseudo-hydrochloride produces no disturbance of refraction.

Flushed with the success of my quest, Shoemaker's *Materia Medica and Therapeutics*, edition of 1901, was consulted and yielded so richly that the article is quoted in full:

Ephedra.—Mormon Tea. The stems or whole herb of Ephedra antisyphilitica (Gentianaceae) is used in Arizona as a recent infusion, or in the form of fluid extract (dose, 4 to 7.5 c.cm., or f℥i-ij) as an alterative, and especially in the treatment of gonorrhea and syphilis. It contains a peculiar kind of tannin, to which its effects are probably attributable, according to Prof. Oscar Loew's analysis; although in a Japanese variety, E. vulgaris, Professor Nagai discovered an alkaloid, which he named **Ephedrine.**

The physiological action of ephedrine has been studied by Professor Bogoslowski, who concluded that it influences especially the motor apparatus of the heart and probably also the cardiac muscle. It at first reduces blood-pressure temporarily and accelerates the pulse, but arterial pressure is finally elevated and the pulse retarded. The respiration is quickened in the beginning by small doses, but, under the influence of larger amounts, sooner or later becomes slow and irregular. The pupils are dilated and salivation occurs. Professor Bogoslowski places the active dose of the alkaloid at 0.10 to 0.50 Gm. (or gr. iss-vss) for adults. The best preparations for use are the fluid extract and the ephedrine hydrochlorate (*Medical Bulletin*, Aug., 1894). The alkaloid occurs in the form of colorless crystals. Ephedrine hydrochlorate is also colorless and is soluble in water.

Ephedrine, in 10-per-cent solution, is a mydriatic, dilating the pupil without irritation in forty to sixty minutes. Under the name of *Mydrin* a combination of ephedrine and homatropine has been employed, and is esteemed particularly serviceable for diagnostic purposes on account of the transitory character of its action. Mydrin is a white powder, soluble in water. It is used in the strength of 10 per cent.

Therapy.—Dr. H. H. Rusby (*Druggist's Bulletin*, 1888, p. 220), is satisfied that the reputation of this drug as a remedy in gonorrhea and syphilis has some solid foundation. As an antiblenorrhagic its action is probably very similar to that of astringents now in use. As a remedy for syphilis, he says, its value is, probably, solely that of a depurative. In the removal from the system of the accumulated products of the disease ephedra will rank with any agent now in use, with the single exception of potassium iodide, and it may well serve to alternate or combine with that drug. It is also considered by persons living in the region of its growth to be a "sure and speedy cure for skin diseases."

Ephedra vulgaris has long had a popular reputation in Russia as an antirheumatic remedy. Clinical experiments by Dr. Bechtine in the service of Professor Popow showed it to be of value especially in acute articular and muscular rheumatism. It was also found to have some laxative effect and to act as a decided diuretic.

It will be noted that the effect on blood-pressure and the salivary glands tallies with that noted in recent experimentation, though dosage is greater. Nothing is said of the effect on the bronchi or the nasal membranes. Merck claims to have been the first to isolate the true alkaloid, which is levorotatory, from the others, doing so in 1888. Which one Nagai, in 1887, produced from the Japanese plant I do not know, nor do I know how much farther back runs the acquaintance of American doctors, herbalists, or others with the action of this valuable herb. I am sure it would be interesting to your readers if some one who has access to older literature would trace its history and publish it in the MONTHLY. Dunglison's *Medical Dictionary* of 1873 makes no mention of it.

The advantages of ephedrin over epinephrin in my own case are marked. Two drops of a 1½ per cent solution will, in about three minutes, begin to reduce turgescence of the nasal mucous membranes, reduction being complete in five minutes and persisting for from six to eight hours. There is no accompanying dryness, sometimes painful, sometimes succeeded by excessive secretion, and no sneezing, all of which, at times, follow the local use of epinephrine.

MARK W. PEYSER, M. D.

A Visit to Minneapolis Clinics.

June 29, 1927.

To the Editor:—It might be of some interest to your readers to learn a few things, outside of the ordinary, from an old correspondent and a loyal member of the Medical Society of Virginia, whose membership dates back to the year 1885.

I am at present temporarily located in the great metropolis of the Northwest, having decided on a short vacation, visiting my daughter, who resides in this great city of half a million people; and, during my stay, decided to spend the greater part of my vacation

brushing up on general medicine and surgery at the great "Minnesota University," located in this city. I paid my respects to Dean Lyon, of the Medical Department of the University, who did me the great honor and generous courtesy of extending me a complimentary ticket to all of the clinics, also the laboratories, where I found every facility for doing good and skilful work, equally as fine as any medical school that it has been my privilege to attend, both in this country and abroad.

The usual daily attendance in all the various departments of this great University averages between six and ten thousand students. The school is co-educational, with a ratio between the two sexes of about one to three in favor of the males. The medical department has an attendance of over four thousand students, which largely accounts for the full supply of doctors in this great Northwest, as every small town and city has an overflow of M. D.'s. This University ranks about fourth in number compared with Yale, Harvard, Leland Stanford, etc. The buildings and fine grounds, I learned, cost about eight million dollars, besides the great endowment fund, from which to draw. This great sum of money was first raised by the great ore mines and flour mills, the latter giving this city the title of "The Flour City of the World." By the way, the doctors and business citizens of the "Twin Cities," St. Paul and Minneapolis, are beginning to get ready for the entertaiment of the A. M. A. meeting next year. There seems to be some jealousy and antagonism between the "Twins." The older twin does not like to be left behind, from a progressive standpoint, while the younger twin is forging ahead and tantalizing her older sister.

Our great old "Mother State," Virginia, needs better and more energetic workers, both in the State Legislature and in the fields, mines and harbors of commerce. If we could exchange about two-thirds of our colored labor for the Norwegian and German laborers and farmers, as is the case in all this great Northwest, our labor problems would be solved. During my two months stay in this State and in Wisconsin, I have not seen as many as half a dozen colored persons. This class of labor is not efficient enough for the people here. All the white people, both men and women, do all of their house work, and they do all mechanical and farm work as well, using tractors and the most modern machinery for all farming as well as for making of good roads and streets, which means much financially to any high class school or university, or city. The State of old Virginia has just as much undeveloped iron and coal lands, saying nothing of her fine harbors, like Hampton Roads, etc., undeveloped all along the Atlantic Coast and the great Chesapeake Bay. If these natural advantages were more thoroughly developed, as suggested by our young and popular Governor Byrd, the Old Dominion would rise from her long slumber and shine forth in her latest radiance, out-stripping all of her sister States who are now boasting of their great universities with their millions of endowments. So let us, the profession, use our influence toward stimulating our people to higher ambition in excelling all other States in commercial ability.

I am looking forward to a fine program for our next State Medical Society meeting in the "Cockade" city, especially since we have such a live wire President and Secretary to do the main work of the Society. I am invited to attend the Minnesota Medical Society meeting in the city of Duluth on June 30-July 1-2. I hope to return to Washington in due time for the Petersburg meeting in October. No doubt that meeting will be well attended by both the "Tuckahoe" and the great South-Western sections of the State.

Wishing your readers much success, I am,

Very truly yours,

(Signed) B. C. KEISTER, M. D.

P. S.—I beg leave to add as a post-script to my communication, that I omitted to mention about our good "young" friend, Dr. Joseph A. White, whose photograph accompanied the last issue of the MONTHLY.

It was my privilege to show this fine photograph to a number of the distinguished professors, who were near by in the University Library. Many of these seemed to know of Dr. White and his great work as an ophthalmologist.

In conclusion, let me add, this hustling city of half a million people is about the size of Washington, but has but few of our colored race. It is kept cool in the summer by the breezes from the great Mississippi river and the thousands of lakes which freeze over in winter, the temperature being often 20° below zero.

President's Page

Letter of the President to the Members of the Medical Society of Virginia.

DEAR MEMBERS:

The fifty-eighth annual meeting of the Medical Society of Virginia will be held at Petersburg, October 18-20, 1927. There are many attractive features about this meeting that should induce the members to attend.

First of all, and most important, there is an excellent scientific program. The program begins with the night session on Tuesday, October 18th, and continues through Wednesday and Thursday. There will be no session on Friday. The Council abolished the session on Friday, as it is usually poorly attended and it seems unjust to authors to put their papers on Friday when most of the doctors have returned home. There should be a full attendance on the sessions on Tuesday, Wednesday and Thursday, so that all papers should have a good audience. The introduction of the new president will be on Thursday.

The new Constitution and By-Laws become effective at this session. This will introduce many features that will be helpful to the Medical Society of Virginia. Among others, there will be an election not only of a new president, but of a president-elect.

There will be a meeting of the Council at three o'clock and of the House of Delegates at four o'clock Tuesday afternoon, the first day. In this way much of the business can be transacted without conflict with the scientific program.

The addresses of the invited guests will be attractive. Dr. John M. T. Finney, of Baltimore, one of the most noted and most beloved surgeons, will speak on a topic of interest to all medical men. Dr. W. C. Davison, pediatrician of Johns Hopkins and who has recently been appointed dean of the Medical School of Duke University, will give an address on "Empyema in Children Under Two Years of Age." Dr. Stewart R. Roberts, of Atlanta, one of the best known authorities on heart trouble in this country, will speak on "The Rheumatic Heart." Dr. M. L. Harris, of Chicago, who has long been deeply interested in the affairs of the American Medical Association, and who has for years been chairman of its Judicial Council, will give an address on the beneficial effects of organized medicine.

There will be a reception, supper and dance following the evening program on Wednesday. The evening program Wednesday will consist of addresses by the invited guests.

Ladies are especially invited, and entertainments and local historic tours are being arranged for them.

Each county society should have representation in the House of Delegates, and every county society should organize in advance of this meeting and select a delegate.

There will be a scientific exhibit under the auspices of the Committee on Scientific Exhibit consisting of Dr. Charles Phillips, of the Medical College of Virginia, chairman; Dr. H. E. Jordan, of the University of Virginia, and Dr. John S. Horsley, Jr. Among other features there will be an exhibit of various pathologic specimens and one demonstrating the early stages of embryologic development. These exhibits will be plainly marked and should be of great interest to all practitioners and specialists.

The reports of the newly appointed committees on the training of midwives and on the regulation of technicians for physicians and surgeons will be made at this meeting.

Let us endeavor to make the Medical Society of Virginia the foremost state medical association in the United States. There is no reason why we cannot do this if every member will consider it not only his duty, but a privilege to attend these meetings and to listen to the papers, to participate in the discussions, and to make any suggestions that he thinks are for the good of the cause.

Sincerely yours,

J. SHELTON HORSLEY, *President,*
Medical Society of Virginia.

Woman's Auxiliary, Medical Society of Virginia

At the request of the officers of the Auxiliary, this space has been set aside for communications from them regarding matters of interest, both to the profession and to the women members of their families.

All communications should be addressed to Mrs. E. F. Truitt, Secretary, Westover Avenue, Norfolk, Virginia.

Health Education Through Women's Clubs

One of the best fields for educational work

for health open to the Auxiliary, lies in women's clubs.

Doctors' wives who have made themselves intelligent about public health principles, and informed about scientific methods of disease prevention, are always being sought for chairmanships of state and county public health committees in parent-teacher associations and women's clubs. These positions offer opportunities for health education which should be welcomed by Auxiliary members.

Missouri offers an example which illustrates this.

Immediately after the organization of the Missouri State Auxiliary, a program for State health work was planned. The steps by which the program evolved were as follows:

(1) A study was made, by a small group of doctors' wives, of state vital statistics, as they reflected general health conditions in the State.

The State Health Department was looked into—its budget, the number and character of its divisions, the type of men filling the positions and the character of their work (The women making the study knew literally nothing about the department or its workings, did not know even the name of the state health commissioner when they started).

(2) They went with their findings to the chairman of the committee on health and public instruction of the State Medical Association, who was able to add materially to their information.

Among the things discovered were that Missouri had a high death and morbidity rate from such preventable diseases as typhoid, that birth statistics were incomplete and inaccurate, that the State Health Department was not adequately financed, and the like; but most important of all, that the State Health Department was trying to push the County Health Unit idea in the state and would welcome help from lay organizations in getting counties educated to the need of full time county health workers, either nurses or county health units.

On the basis of this information a tentative program for State Auxiliary work was planned. Its essentials were to urge county auxiliaries:

(1) To put on study programs covering the fundamentals of personal and public hygiene;

(2) To study their local health conditions;

(3) To study their own county official and non-official machinery for disease prevention and health promotion;

(4) Where there was no full time county health department, to ask the State Health Department to tell them what the county needed and what they could do to improve conditions, and then to do what the department directed; and

(5) To look to the County Health Unit or (if the county had too few people or too little money to justify that) to county health nurses, as the solution of their rural health problem.

This proposed program was approved by the chairman of health and public instruction of the State Medical Association, was accepted by the Auxiliary State Board, and was presented by the chairman of health and public instruction of the State Medical Association to that Association and approved by it. (Not until all these steps had been taken did the Auxiliary officers feel free to go to work).

This official program was later also heartily approved by the State Health Department and has for three years been the basis of State Auxiliary work.

The State Auxiliary president during whose term this program developed was, the following year, appointed chairman of health for the State Federation of Women's Clubs. She immediately planned the Federation work on the same program. Clubs all over the state were put to reading papers on health topics, supplied by her when she was requested to do so. The Federation State Journal carries her articles, at first accompanied by advertisements for Abram's Treatment, "examination free" doctors and dentists, chiropractors and osteopaths. (She quickly laughed the Abram's Treatment out of the advertising pages. The other advertisers are requiring more serious treatment).

Two years of steady plugging have started club women all over the state to thinking about their local health conditions and studying health topics. The idea of looking to the State Health Department for guidance is taking hold. The county health nurse and County Health Unit idea is growing rapidly.

Further, the present president of the State Auxiliary has accepted a similar position with the State Parent-Teacher Association and has been able to carry these same ideas, especially that of the County Health Unit, over into that organization.

Results in actual accomplishments are beginning to appear.

A few months ago, at the request of the State

Health Department, a baby hunt (a birth registration drive) was put on in Missouri by these three organizaions (the Auxiliary, the Federation and the Parent-Teacher Association) working together, which resulted in an intensive state-wide educational campaign in the county and city newspapers, and in the discovery of many unregistered babies. This united effort to help get Missouri into the Federal birth registration area is a significant thing, made possible by the influence exerted in the Federation and the Parent-Teacher Associations by Auxiliary workers.

This is but a first step toward tying together the health work done by these and similar organizations and directing that work away from the less essential to the vital and fundamental. —(*Bulletin of Woman's Auxiliary, A. M. A.*)

As we look forward from year to year to the meeting of the State Woman's Auxiliary to the Medical Ssociety of Virginia, there is a feeling of much pleasure at renewing the personal friendships of the years passed. The meeting and associating with the doctors' wives of our own great State has formed ties of friendship that cannot be easily broken.

Attendance upon state conventions has always been looked forward to by the wife as well as the doctor. Since the organization of the Woman's Auxiliary they are doubly so. In the few years of their existence, they have taken a definite place, not only in terms of fellowship, co-operation and loyalty, but in service to their communities and the State. They are a happy combination of work and play, and—who will deny that the wife needs the play time and relaxation as well as the doctor himself? For as they come together at this time, to mix and mingle in social hours and in business meetings, reporting on the work of the year and perfecting plans for the future, they are of mutual encouragement and inspiration to each other.

Those who are not members of the auxiliary are cordially invited to attend and, if your county medical society has not an auxiliary, it is earnestly hoped that you will come to this meeting, get the vision, and be inspired to go home and organize for the benefit of your county, your doctor and his profession.

"Mates for your husbands, staunch and true
As their work you help them do,
Never do you falter, never bend,
Stand you firmly to the end."

The President of each County Medical Society, which has not an Auxiliary, is asked to appoint one or more leading women in his county to attend the meeting of the Woman's Auxiliary to the Medical Society of Virginia in Petersburg, October 18th-20th, with the view of forming an auxiliary to his county society.

The Truth About Medicine

In addition to the articles enumerated in our letter of June 25th, the following have been accepted:

Lederle Antitoxin Laboratories

Erysipelas Streptococcus Antitoxin (Lederle), Unconcentrated.

NEW AND NON-OFFICIAL REMEDIES

Crotalus Antitoxin.—An antitoxic serum prepared by immunizing animals against the venom of snakes of the crotalus family. Evidence has accumulated to show that the venom of certain snakes may be neutralized by the employment of a serum obtained from animals that have been injected with venom from a snake of the same family. Crotalus antitoxin is used to neutralize the venom injected by the bite of members of the crotalus family. The serum is administered intramuscularly, subcutaneously and in certain cases it may be administered intravenously.

Antivenin (Nearctic Crotalidae).—North American Anti-Snake-Bite Serum.—An antitoxic serum prepared by injecting horses with venoms from serpents of the North American species of the family *Crotalidae* (Rattle Snake, 75 per cent; Copperhead, 12½ per cent; and Water Moccasin, 12½ per cent). It is claimed to have neutralizing effect against the venom of the species represented. The serum is marketed in syringes containing 10 c.c. (a single dose). H. K. Mulford Co., Philadelphia. (Jour. A. M. A., July 2, 1927, p. 29).

Erysipelas Streptococcus Antitoxin (Lederle) Unconcentrated.—An erysipelas streptococcus antitoxin (New and Non-official Remedies, 1927, p. 337), prepared by immunizing horses by subcutaneous injections of the toxic filtrate obtained from broth cultures of the erysipelas streptococcus, or by intravenous injection of cultures of the erysipelas streptococcus obtained from typical cases of erysipelas. It is administered in early cases of moderate severity in dosage of 12 c c. intramuscularly; in severely toxic and late cases, 36 c.c. to 48 c.c. intramuscularly, or 24 c.c. to 36 c.c. intravenously. This product is marketed in syringes containing 12 c.c. Lederle Antitoxin Laboratories, New York. (Jour. A. M. A., July 30, 1927, p. 373).

PROPAGANDA FOR REFORM

Ergosterol.—The present evidence indicates that ergosterol is the precursor of vitamin D, that is, the parent substance from which vitamin D is formed. It is probable that the activity of cholesterol produced by irradiation, is due to the presence of ergosterol in cholesterol. The biologic tests with irradiated ergosterol have been astounding. A daily dose of 0.0001 mg. of irradiated ergosterol has cured and prevented rickets in rats kept on a rachitogenic diet. Irridiated ergosterol is the most potent antirachitic substance known, 5 mg. being equivalent to approximately 1 liter of a good cod liver oil. (Jour. A. M. A., June 18, 1927, p. 1969).

Absorption of Vitamin D Through the Skin.—The antirachitic factor, now commonly designated as vitamin D, which seems to be essential for the

proper development and maintenance of the skeletal structures, apparently is not produced within the living body of man. The necessary supply is ordinarily derived either through the ingestion of antirachitic foods or through exposure of the skin to sunlight or untraviolet rays. The last mentioned method is somewhat uncertain with respect to precise dosage. The alimentary path of introduction of the vitamin is usually the most convenient method for antirachitic therapy. Sometimes, though rarely, there may be barriers to its use; hence alternative procedures have been looked for. It has been found that the subcutaneous administration of cod-liver oil may lead to curative results attributable to the fat-soluble vitamins. It has now been found that vitamin D as it is secured in irradiated sterols can be absorbed from the uninjured skin. The possibility of antirachitic therapy by inunction is thus presented. (Jour. A. M. A., June 18, 1927, p. 1970).

The "Cass Treatment" Trickery.—The "Cass Treatment for Rheumatism" was a particularly bold piece of Chicago mail-order quackery, conducted under the name "Cass Laboratories." The Cass Laboratories were not laboratories; its alleged president, "Harvey L. Cass", who was featured throughout the advertising, did not exist, but the concern was run by one H. L. Cassel, in association with his brother-in-law, one Joseph V. Creevy. The "treatment" consisted of baking soda tablets, of other tablets containing aspirin and cinchophen, and of some flavored epsom salt, as was shown by an analysis made by the A. M. A. Chemical Laboratory. In October, 1926, the Post Office Department called on the Cass Laboratories to show cause why a fraud order should not be issued against it. In February, 1927, Cassel submitted an affidavit to the Post Office Department, declaring that he was authorized and empowered to execute it on behalf of the Cass Laboratories, and swearing: "That the business heretofore conducted under the name Cass Laboratories has been discontinued and abandoned and will not be resumed at any time in the future". The facts were, that for a month or more before Cassel made this sworn statement, the name "Cass Laboratories" had been abandoned and the rheumatic public was receiving the same line of quackery under a new trade name: "H. L. Cass Corporation". It is to be hoped that in due time the Post Office authorities will issue a fraud order not only against the company itself, but against those conducting it. (Jour. A. M. A., June 18, 1927, p. 1983).

Kerosene.—Kerosene is a weak antiseptic and parasiticide and irritant to the skin. Therefore: It can be used for parasitic affections of the scalp. It is of some use for seborrheic dermatitis of the scalp and, if it has any effect in preventing the outfall of hair, it is presumably due to its irritating—stimulating—effect on the skin. But it does all these things in a crude, disagreeable way. All of them can be done more efficiently and much more accurately with drugs of definite composition. Its vogue as a hair tonic and hair restorer is largely due to that popular feeling, which has come down through the milleniums from our barbarous ancestors, that the efficiency of drugs is in proportion to their disagreeableness. (Jour. A. M. A., June 25, 1927, p. 2048).

Disgusting Medical Advertising.—The medical profession is now being circularized with an illustration advertising presumably "Proveinase-Midy." The circular shows a disproportionate naked Hercules and a depressed naked female, whom the Hercules seems about to energize with Proveinase." The name Midy has meant little that is inspiring to the American medical profession. Santal-Midy is sandal oil capsules that have been exploited largely by way of posters in public toilets. The advertising of "Proveinase" merits contempt and resentment. (Jour. A. M. A., July 2, 1927, p. 32).

National Medical Bureau, Inc.—Physicians have been circularized by the "National Medical Bureau, Inc." The letterhead of this concern carries with it the idea that it is a nation-wide organization, having offices in New York City, Chicago and Los Angeles, with a "Division Office" at South Bend, Ind. The circular letter which the "Bureau" sends to a physician states that it is about to appoint a physician in his locality to care for its members. It explains that the appointee would receive remuneration for his services and he is told that if selected, he would automatically be made the family physician in more than 500 homes of the city. Investigation showed that all correspondence was handled from South Bend, Ind., by one A. M. Nadel, who did not divulge the names of the incorporators. The Indiana Department of State declared that it had no record of the National Medical Bureau, Inc. (Jour. A. M. A., July 2, 1927, p. 49).

"Apocactin" and "Pasconia" Merrell.—The Wm. S. Merrell Co. suggests to a physician that he consult the firm's catalogue for "the particular kind of remedial agents for the different pathologic conditions met in daily practice." As an illustration of the advice that may be had from a perusal of the catalogue, three products are mentioned: "Apocactin," "a combination of drugs you don't often encounter," which is stated to contain Hawthorn, Cactus, Apocynum, Avena Sativa and Collinsonia; Fibrogen, a blood coagulant which has not been admitted to New and Nonofficial Remedies; Pasconia, "a sedative and stabilizer in the erratic action of the 'nervous heart'," which is stated to contain Passiflora Incarnata, Avena Sativa, and Collinsonia. The drugs that make up "Apocactin" and "Pasconia" are not to be found, either in Useful Drugs or in the United States Pharmacopeia. Some are not even included in the National Formulary, which aims to include preparations of drugs which are supposed to have any usefulness at all. All belong to that larger and ever-growing collection of drugs that have been discarded because they were found to be inert or inferior to other drugs having the same action. The following is the estimate of the Council on Pharmacy and Chemistry as given in the Epitome of the U. S. Pharmacopeia and National Formulary for those drugs constituents of "Apocactin" and "Pasconia," which are included in the National formulary: Passiflora (passion flower), "Exploited by manufacturers of proprietary medicines for the treatment of insomnia, but probably inert." Avena Sativa (oat) "A constituent of certain nostrums; has no place in the materia medica." Apocynum (Canadian hemp) "Cardiac tonic of digitalis group unreliable as to rate of absorption." (Jour. A. M. A., July 2, 1927, p. 50).

Two Obesity Fakes Dodge Fraud Orders.—The Post Office Department called on the Hall Chemical Company, which sells the obesity preparation, Hall's Tablets Triturates—to show cause why a fraud order should not be issued against it. The proprietor of the company submitted an affidavit declaring that the sale through the mails of Hall's Tablets Triturates had been abandoned. Similarly the firm which exploits "Slends," a chewing gum coated with a mixture containing sugar and phenolphthalein, when asked why a fraud order should not be issued for selling Slends through the mails submitted an affidavit declaring that the business of selling Slends through the mails had been discontinued. There is, of course, nothing in the action of either firm to prevent the sale of the products in question through the drug stores. (Jour. A. M. A., July 9, 1927, p. 138).

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Editorial

Calcium Carbonate—Sodium Bicarbonate—Magnesium Hydroxide.

Practitioners have frequent use for alkalies. Any observations that seem to improve our knowledge of this class of remedies should be carefully weighed. In gastric disturbances, in gastric and duodenal ulceration, so-called antacids have been long employed. Probably too freely have physicians and laity used alkalies after meals in order to allay disturbing and unpleasant gastric symptoms. Probably, also, have treatments for gastric ulcer employed too large amounts of sodium bicarbonate and calcined magnesia. Probably again, the laity have fallen into the too free use of soda for the purpose of relieving "heart burn," "sour stomach," "dyspepsia," and other so-called stomach troubles.

In view of this status, it may be well to comment upon any careful observations that may be in current publications pertaining to this subject.

Loevenhart and Crandall (*J. A. M. A.*, vol. 88, No. 20, page 1557), draw attention to calcium carbonate in the treatment of the gastric hyperacidity syndrome, and, in doing so, present some salient reasons for preferring use of this drug over sodium bicarbonate, magnesium hydroxide and carbonate. They give the following specifications as composing an ideal antacid:

1. Insolubility.
2. Non irritating to stomach or intestine.
3. Neutral in aqueous solution and, yet capable of neutralizing acid.
4. Acid-base equilibrium not affected by it.
5. Alkalinization of urine, with attendant phosphatic crystallization, is avoided.
6. Diarrhea and constipation not produced.
7. Mineralization of blood uninfluenced.

Sodium bicarbonate is soluble, it is irritating in high concentration, and may produce alkalosis. Urine is alkalined by it; this may produce precipitation of phosphates in crystalline form. Renal colic has occurred in persons addicted to excessive "soda-taking." This is one of the dangers noted in the Sippy treatment for gastric ulcer. The use of sodium bicarbonate, alone, for hyperchlorhydria, is attended by only a temporary fall of acid level and is followed by a higher acid than before it was taken. Sodium bicarbonate, alone, is not an ideal antacid; in combination with calcined magnesia, it is considered to be better than alone.

Magnesium hydroxide and carbonate are less soluble than sodium bicarbonate, but the irritation of intestines and cathartic action of magesium make for unpleasant effects upon the patient. These authors feel that the catharsis as experienced in the Sippy treatment is not desirable. This is a matter for discussion.

In calcium carbonate, alone, these workers find an ideal antacid. They give these reasons:

(1) When suspended in water it is neutral.
(2) It neutralizes gastric acid, forming calcium chloride and carbon dioxide.
(3) It can be given almost *ad libitum*.
(4) It does not affect the bowels, except when given in very large amounts it makes bulky stools.
(5) It tends to protect ulcerated surfaces from irritation.

Massive Collapse of the Lung.

This unusual condition of the lung has recently been brought forward in publications and additional cases have been reported. Sante's paper (*J. A. M. A.*, vol. 88, No. 20), calls attention to this subject and presents a suggestion of promise in the treatment.

Sir John Rose Bradford has prepared a general discussion of the subject. Sir John's monograph in Oxford Loose Leaf Medicine (2:127, 1920), treats the condition, based upon

his observations up to and after the war. Other authors have given the subject consideration. Pasteur in 1890 first published observations on massive collapse of the lung, after studying thirty-four cases, following post-diphtheritic paralysis of the diaphragm. Bradford's reported sixteen cases, in 1914, as a complication of 2,000 abdominal operations. Sante notes other observers, but especially calls attention to the roentgen-ray observations of Holmes and Ritvo, noting the belief of these observers, that the condition has been "passed up" as being due to pneumonia. Scott's paper, January, 1925, added four cases.

The association of roentgen-ray examination with physical examination more accurately establishes this unusual condition, which may complicate abdominal operations or may occur without such immediate cause. There may be sudden onset, characterized by pain in the chest region, shortness of breath, rapidity of pulse rate and cyanosis. At first, sputum is scant; later, it is profuse and purulent, but it is not bloody, or like "prune juice." There is slight fever, if any, at first; later, the temperature may go as high as 102° F.

There may be a different assortment of symptoms in some cases and the pulmonary symptoms may assume less prominence and are discoverable only on careful physical examination.

Massive atelectatic collapse of the lung defines itself. Microscopically, the bronchioles and alveoli are collapsed and atelectatic; function less; here and there, a small group of air cells may be inflated. The lung occupies a smaller area, but is not separated from the chest wall; the chest wall being depressed, the heart and mediastinal structures are dragged over to the affected side, and the diaphragm is drawn upward by the affection.

Roentgenographically there is some difficulty in diagnosing this condition from pneumonia, but the narrowing of chest on the involved side, the approximation of the interspaces, the elevation of the diaphragm, and displacement of heart and mediastinal structures toward the affected side, afford points of differentiation. The cause of massive atelectatic collapse of the lung is not definitely known, although it is a definite clinical entity, occurring probably more often than it has been recognized. As it is more carefully observed, the causes and associations of it may be more thoroughly understood. It seems quite probable, according to Sante, that some injury to the vagus may be the cause of temporary collapse of bronchioles, which affords an approximation of the wall of the bronchioles. Apposition and cohesion of collapsed walls brings about therein an atelectatic state in bronchioles and alveoli.

Sante suggests that rolling the patient back and forth on the involved side is a potent remedy; that bronchoscopic removal of mucus is more risky and more difficult.

Trachoma.

A round table discussion of any disease problem is helpful. In the search for etiologic influences of public health problems, such a consideration is particularly advantageous. One may obtain this angle on the question of trachoma, in perusing a paper by Royer (*J. A. M. A.*, August 14, 1926), and the discussion thereon. It is profitable in the interest of general information to take up a new hypothesis, as Royer has done, and to work it in with what has heretofore been tentatively accepted as probably the basic factors operating in the widespread incidence of disease. As late as 1925, a general "round up on the question of the contagiousness and transmissibility of trachoma was undertaken by responsible bodies of investigators. The results of these studies have not been altogether conclusive as noted by Royer. Confusion is found in the question of cause. Is the disease bacterial or parasitic in origin? Is it a food deficiency disease? Is it caused by both factors, poor nutrition and bacterial folliculosis?

Pathological Symptoms: Trachoma is a folliculosis of conjunctival tissue. The disease is first observed in the lining of the upper lid. There is thickening and marked subepithelial inflammation. This increases and spreads; it may involve both lids.

Subepithelial lymphoid structures multiply. Surface epithelium becomes thin and papillae project above the surface. Later the meibomian glands become involved. Multiplication and overgrowth of folliculous tissues, overcrowding epethelium, results in a separation of this layer and a discharge through these openings of material from broken down follicles. About these, granulations of raspberry like masses are formed. Itching, winking ro-

tation of the eye, and eye pains are symptomatically prominent.

In the late stages of fibrosis and scarring, deformities of the lids and lashes make for distress of various sorts and bring about distortions. The disease is slow in progress, involving years.

GEOGRAPHIC DISTRIBUTION.

It is a disease of widespread incidence. In Egypt, Palestine, China, Russia, Hungary, Poland, the Balkans, Japan, Mexico, trachoma is a serious medical problem. In the United States, it is likewise found. Incidences of trachoma in mountain people, native white, in the Appalachian country of eastern Kentucky, West Virginia, Virginia, Tennessee and North and South Carolina, is high. American Indians show 22 per cent of trachoma in 59,000 examined in 1912, but now 12 per cent is thought to be a fair estimation of its incidence among Indians.

News Notes

To The Component Organizations of the Medical Society of Virginia!

A special meeting of the House of Delegates of the Medical Society of Virginia is called by the President for 4 P. M., Tuesday, October 18th, in the High School Building, Petersburg, Va.

Reports of Special and Standing Committees will be called for at this meeting. The purpose of this meeting is to expedite the scientific program.

All component organizations will please elect their delegates and instruct them to be at Petersburg for the above named meeting.

Petersburg Meeting, Medical Society of Virginia.

Petersburg doctors have been busy preparing for our fifty-eighth annual meeting and it is needless to say that everything will be in "apple-pie" order when the Medical Society of Virginia meets there, October 18, 19 and 20. The letter by our president, Dr. J. Shelton Horsley, of Richmond, in this issue, brings out many points of interest with regard to the meeting. Programs will be issued toward the end of this month. In addition to the regular sessions of the society, there will be a meeting of the Pediatric Society, organized at the Norfolk meeting, and also of the Virginia Hospital Association, recently organized in Roanoke.

Each component society is urged to be represented in the House of Delegates, the business body of the Society. This year there may be one delegate for each fifty members in a society or major fraction thereof, provided that each society has at least one delegate. Societies composed of more than one county will be entitled to one delegate for each county included in such society.

There will be the usual golf tournament on Tuesday, a reception, buffet supper and dance on Wednesday evening—the one on which we will have papers by our invited guests—and entertainment for the ladies.

Those attending should make hotel reservations in advance, and the chairman of Hotel Committee, Dr. E. L. McGill, will attend to these upon request. The Petersburg Hotel offers single rooms from $2.00 to $3.50, the Jefferson and the Savoy Hotels at $1.50 to $2.50, and the Chesterfield at $1.50 to $2.00.

Members of the Rotary, Kiwanis and Lions Clubs and other civic organizations will placard their cars, "WELCOME MEDICAL SOCIETY OF VIRGINIA," and members will be given free transportation to any point in the city by hailing one so marked.

The ladies have planned a most attractive program from a luncheon to the executive board of the Auxiliary on Tuesday, to a theater party on Thursday evening, and all doctors are urged to bring their wives and daughters. The full program for the ladies will appear in the State Society's program.

The following chairmen of the various local committees will gladly furnish any information requested:

GENERAL CHAIRMAN—Dr. J. Bolling Jones.

RECEPTION AND AUTOMOBILES—Dr. L. S. Early.

BADGES, PRINTING AND PUBLICITY—Dr. Wright Clarkson.

GOLF—Dr. W. P. Hoy.

FINANCE—Dr. William F. Drewry.

ENTERTAINMENT—Dr. Mason Romaine.

COMMERCIAL AND SCIENTIFIC EXHIBITS—Dr. Wm. C. Powell.

HOTELS AND MEETING HALL—Dr. E. L. McGill.

LADIES—Mrs. E. J. Nixon.

Much Work to be Done.

Now that the play season of the year is about over, we are all returning home with the feeling that "there's no place like home," and

also with the thought that there is much work for each of us to do.

One of the urgent needs of all members of the Medical Society of Virginia is to lend their cooperation to make our Society one of the best. Our component societies need to be more active, and we can help in putting this over by regular attendance and taking a part in the discussions at the meetings. It is human nature to be much more interested in anything in which we put our money and time. By the way, we hope this may be a reminder to those who have not paid their annual dues that "now is the accepted time."

Component societies which have not elected delegates to the Petersburg meeting are requested to attend to this promptly and urge their delegates to attend and take an active part in the business sessions. Each delegate should be instructed to make a report on the State Society meeting at a meeting of his component society, shortly thereafter.

Go after the eligible doctors in your section and get them to join and attend your meetings, and let's make next year the best in our history.

Additional Licensees of the Virginia State Board of Medical Examiners.

In addition to the list of licensees who were granted certificates from the Board for having taken the full examinations, publish in the August MONTHLY, the following were granted licenses to practice in Virginia by reciprocity:

Dr. Samuel A. Anderson, Richmond, Va.
Dr. Ernest B. Bowery, Johnson City, Tenn.
Dr. Wm. C. Brice, Stonega, Va.
Dr. E. S. Claytor, Jr., Philadelphia, Penn.
Dr. Hugh W. Clement, Toms Creek, Va.
Dr. D. Linwood Fleshmen, Hemphill, W. Va.
Dr. Herbert L. Freeland, Richmond, Va.
Dr. Wm. Hollister, Washington, D. C.
Dr. Jay S. Liebman, Newark, N. J.
Dr. C. Herbert Marshall, Jr., Washington, D. C.
Dr. Ivan B. McEachin, Morgantown, W. Va.
Dr. Andrew Pugh, Portsmouth, Va.
Dr. Herbert L. Shinn, Norfolk, Va.
Dr. Harold C. Thornton, Birmingham, Ala., and
Dr. C. L. Woodbridge, Montreat, N. C., on practical examination.

The Augusta County Medical Association

Held its regular tri-monthly meeting at Crafton Park, Staunton, August 3rd, followed by a dinner. The principal order of business at this meeting was the election of officers, which was as follows: President, Dr. J. F. Fulton, of Staunton; vice-presidents, Dr. Guy R. Fisher and Dr. Franklin Hanger, of Staunton, and Dr. R. S. Griffith, of Basic City. Dr. W. F. Hartman, of Staunton, R. F. D. 7, was re-elected secretary, and Dr. T. M. Parkins, of Saunton, treasurer.

The Warren, Rappahannock and Page Medical Society

Held its regular meeting at Flint Hill, August 9th, with Dr. E. L. Grubbs, of Front Royal, presiding. Dr. D. M. Kipps, of the same place, was at the secretary's desk. Several interesting papers on "Gastro-enteric Diseases of Infancy and Childhood" were read and discussed by members. The following delegates and alternates were elected to represent this society at the Petersburg meeting of the State Society: Dr. L. F. Hansbrough, with Dr. Giles Cook as alternate, from Warren County; Dr. E. R. Browning, with Dr. James G. Brown as alternate from Rappahannock County, and Dr. George H. Long with Dr. B. C. Shuler, as alternate, from Page County.

Arlington County Medical Society.

At the meeting of this Society, on August the 11th, Dr. W. Calhoun Stirling, of Washington, D. C., read a paper on "Pyelitis: Its Prevalence and Treatment," and Dr. Edmind J. Horgan, also of Washington, reported a case of "Thrombo-angitis Obliterans." At the business session, Dr. R. N. Sutton, Clarendon, was elected delegate, and Dr. W. C. Welburn, Ballston, alternate to represent this society at the Petersburg meeting of the Medical Society of Virginia.

Dr. H. A. Hornthal, Potomac, is president, and Dr. B. H. Swain, Ballston, secretary-treasurer of this society.

The Patrick-Henry Medical Society,

At a meeting held recently, elected Dr. R. R. Lee, Martinsville, president, and re-elected Dr. H. G. Hammond, also of Martinsville, secretary-treasurer. Dr. J. T. Shelburne, of Critz, and Dr. J. L. Blanton, of Fieldale, were elected delegates to the Petersburg meeting of the State Society. Mrs. J. M. Shackelford, Martinsville, was appointed to attend the State Society meeting, with a view to getting ideas for organizing a Woman's Auxiliary to

this local society. Dr. E. B. Noland, Bassetts, was recently elected a new member. The society meets quarterly.

Belgium Makes New Child Labor Restrictions.

In April of this year Belgium passed a law prohibiting the employment of children under sixteen in theatrical establishments, music halls, places of night amusement, and similar establishments. In exceptional cases exemptions may be permitted by the minister of labor and social welfare for employment in theatrical establishments. This law also prohibits children under sixteen from offering any articles for sale in such places of amusement, in public establishments, and in the streets.

Dr. Harry D. Law,

Nitro, W. Va., of the class of '17, Medical College of Virginia, went abroad with the members of the American Legion, early in September. While abroad, he expects to take a post-graduate course in Vienna.

Dr. and Mrs. G. A. Ezekiel,

Richmond, Va., are home again after a visit to Baltimore and a motor trip through the Valley of Virginia. While away, Dr. Ezekiel also attended an encampment at Camp Meade, Md.

Superintendent of West Virginia Hospital.

Dr. James W. Hartigan, Morgantown, W. Va., was recently appointed by the governor as superintendent of the Weston, W. V., State Hospital, to succeed Dr. Mortimer D. Cure. He has already entered upon his duties there.

Dr. Ray A. Moore

And family, Phenix, Va., have been spending the summer in Boston, where Dr. Moore has been doing post-graduate work. They motored up the latter part of May by way of the Valley of Virginia, Harrisburg, Pa., Niagara Falls, and Albany.

Dr. Moore expects to return to Virginia about the first of October and will locate in Farmville, Va., on his return.

Vacation for Children Who Cannot Go to the Country.

New York City has 300 vacation playgrounds this summer—an increase of 100 over the number conducted last year. Besides the regular vacation playgrounds of the board of education, this number includes supervised open-air playgrounds established in school athletic fields, playground annexes organized in co-operation with various institutions and settlement houses, and twenty-five summer playschools for all-day care of children. The playschools are conducted between the hours of 9 A. M. and 5 P. M., at various institutions daily, during the vacation period. The pupils of these schools are children who are suffering from curable physical ailments, including malnutrition, and children whose parents are absent from home all day. Food, medical attention, and nursing are supplied by various city departments and nursing committees, and a limited number of teachers are furnished by the board of education.

The Child Study Association of America conducts playschools as a special project to prove not only that the city child who cannot go to the country in summer can have both an enjoyable and a profitable vacation but that existing institutions such as schools, hospitals and settlements can be used to this end.

Dr. Mallory S. Andrews,

Who has spent the past year at Johns Hopkins Hospital, Baltimore, has returned to Norfolk, Va., and is now resident house surgeon at St. Vincent's Hospital, that place. Dr. Andrews is an alumnus of the University of Virginia in the class of '25.

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons

Will hold its annual meeting at Asheville, N. C., September 15-17, under the presidency of Dr. John Osborn Polak, of New York. Dr. James E. Davis, of Detroit, Mich., is secretary.

Mr. Wortley F. Rudd,

Dean of the School of Pharmacy of the Medical College of Virginia, was elected a member of the executive committee of the American Association of Colleges of Pharmacy, at its meeting in St. Louis, Mo., in August.

Dr. Guy Hinsdale

Has returned to his home at Hot Springs, Va., after spending the summer at Kennebunkport, Maine.

Dr. and Mrs. E. B. Nuckols

And their two children, of Cumberland, Va., have returned home after spending their vacation at Virginia Beach, Va.

The Gill Memorial Eye, Ear and Throat Hospital,

Roanoke, Va., announces that, at their staff meeting on September 19th, they will have as invited guests Dr. Wm. Thornwall Davis, of Washington, D. C., who will speak on "Glau-

coma," and Dr. Samuel Iglauer, of Cincinnati, O., whose subject will be "Iodized Oil in the Diagnosis of Broncho-Pulmonary Conditions." The latter paper will be illustrated with lantern slides.

East River Pier School in New York City.

The board of education and the board of health have united in establishing on East River Pier, New York City, a school for children suffering from malnutrition and incipient or arrested tuberculosis. Although the pupils take the regular work for their particular grades, they have much individual attention. All are examined once a term by the physician, and an effort is made to see that each child who needs it receives health care. Three warm nourishing meals are served daily. Pupils suffering from malnutrition are returned to regular schools on reaching normal condition, but children assigned because of disease are released only on order of the physician in charge.

Dr. H. C. Grant

Announces his removal from Norfolk, Va., to Smithfield, Va., where he will continue the practice of his profession.

Dr. and Mrs. E. C. Levy,

Tampa, Fla., spent their vacation this year at Chimney Rock, N. C. They motored up, stopping at several places. Dr. Levy was formerly in charge of the health department in Richmond, Va., and now holds a similar position in Tampa, Fla.

The American College of Surgeons

Will hold the seventeenth Clinical Congress in Detroit, October 3-7. Headquarters will be at the Book-Cadillac and Statler Hotels, and the meetings will be held at the Statler Hotel and Orchestra Hall. The Hospital Standardization Conference will extend from Monday morning to Thursday afternoon and will include a discussion of hospital and nursing problems and hospital demonstrations. Monday evening's program will include an address of welcome by the local chairman, the address of the retiring president, the inaugural address of the new president, and the John B. Murphy oration. Clinics in general surgery will be held in the Detroit hospitals each morning from Tuesday to Friday, and in Eye, Ear, Nose and Throat work the same afternoons. Clinics will also be held at University Hospital, Ann Arbor, Tuesday to Thursday. On Tuesday and Wednesday mornings and afternoons, and on Thursday morning, clinical demonstrations will be held at the Statler Hotel (mornings) and Orchestra Hall (afternoons). On Thursday afternoon the annual meeting of the Governors and Fellows will be followed by a cancer symposium. On Friday afternoon there will be a symposium on traumatic surgery, to be participated in by leaders in industry, labor, indemnity organizations, and the medical profession. On Tuesday evening the program will take the form of a celebration of the Lister Centennial. On Thursday evening there will be a large Community Health meeting in the Masonic Temple, and on Friday evening the Annual Convocation of the College.

Other outstanding features will be the exhibits. In addition to the commercial exhibits there will be a replica of the Lister exhibit at the Wellcome Museum of Natural History, London, including Lister's operating rooms and hospital wards. The Departments of Hospital Activities, of Literary Research, and of Clinical Research of the College will also present exhibits. Among the foreign guests will be Sir John Bland Sutton, England; J. M. Munro Kerr, Scotland; Gordon Craig, Australia; Gustaf E. Essen-Moller, Sweden; S. A. Gammeltoft, Denmark. The retiring President is W. W. Chipman, Montreal, and the President to be inaugurated, George David Stewart, New York. The Lister oration will be delivered by W. W. Keen, Philadelphia. The chairman of the Detroit Committee on Arrangements is Alexander W. Blain.

Dr. R. A. Bennett,

Bedford, Va., has been elected chairman of the Bedford County Democratic Committee.

Dr. and Mrs. Victor C. Vaughan,

Of Detroit, Mich., celebrated their golden wedding anniversary in August. Dr. Warren Vaughan, Richmond, Va., was with his parents on this occasion.

More Playgrounds for Great Britain.

An appeal signed by the Duke of York, president of the National Playing Fields Association of Great Britain, calls for £1,000,000 and many acres of land for recreational purposes, "to provide the whole community with adequate playing fields, especially the 4,000,000 boys and girls of elementary-school age." In response to the appeal, the king has given six acres of the Royal Paddocks of Hampton

Court for a playground, which will be known as the King's Fields, and the Carnegie Fund trustees have made a grant of £200,000.

The Virginia Hospital Association.

A number of hospital representatives met at The Patrick Henry Hotel in Roanoke, Va., July 21st, 1927, and discussed the advisability of a hospital association in Virginia. Dr. J. M. Shackelford, of Martinsville, was elected president of the temporary organization and Dr. A. P. Jones, of Roanoke, Secretary. The next meting to complete the organization will be held in Petersburg during the State Society meeting.

The following members were present at the Roanoke meeting:

Dr. F. H. Smith, Abingdon,
Dr. E. L. Lawrence, Roanoke,
Dr. T. J. Hughes, Roanoke,
Dr. J. B. Williams, Richmond,
Dr. S. S. Gale, Roanoke,
Mr. M. H. Coleman, Richmond,
Dr. W. C. Akers, Stuart,
Dr. A. P. Jones, Roanoke,
Dr. J. M. Shackelford, Martinsville.

Married.

Dr. Wyatt Sanford Beazley, Jr., and Miss Ruth Randolph Walker, both of Richmond, Va., September 3.

Dr. Staige Davis Blackford, University, Va., and Miss Lydia Harper Fishburne, of Charlot tesville, Va., in New York, August 20. Dr. Blackford is returning to the University this Fall, after having been at the Massachusetts General Hospital, Boston, for the past two years.

Dr. Palmer A. Shelburne, of the class of '27, Medical College of Virginia, now at the U. S. Marine Hospital, Baltimore, Md., and Miss Ruth Elfreth Friend, Richmond, Va., August 27.

"The Country Doctor."

The Pathe Exchange, Inc., announces that this picture will shortly be shown at leading theatres throughout the United States and is dedicated to the doctors of America. This picture features Rudolph Schildkraut, the famous character actor, and critics state that the production will go down in motion picture history as an outstanding feature production.

The Southern Medical Association

Is to hold its twenty-first annual meeting in Memphis, Tenn., November 14-17, 1927, under the presidency of Dr. J. Shelton Horsley, of Richmond, Va. An interesting meeting, scientifically and socially is being prepared. Memphis has a modern and complete convention auditorium and it is stated that the greater part of the convention activities will be held under this one roof. Information as to details may be obtained from the secretary-manager of the Association, Mr. C. P. Loranz, Empire Building, Birmingham, Ala.

Erratum.

In our August issue, we incorrectly stated that Dr. H. D. Howe is chairman of the committee, recently appointed by Dr. Horsley, president of the Medical Society of Virginia, to investigate matters concerning the training of midwives in Virginia. The chairman of this committee is Dr. Greer Baughman, of Richmond. Dr. Howe is, however, a member of the committee.

Motion-Picture Censorship in Hungary.

Laws enacted in Hungary in 1924 and 1925 provide for censorship of all motion pictures by a special national board, and only those films passed upon may be produced in public. In approving a film, the board must state whether it is suitable to be presented before persons under eighteen years of age, and when a film has been rated as unfit for children the theaters showing it must display above the entrance a sign to that effect. In addition, a statement with regard to its character must be made in the preliminary announcements of the film.

Children under five years of age may not be admitted to theaters unless accompanied by adults.

Dr. John P. Haller,

For sometime past located at Pocahontas, Va., has moved to Langhorne Place, Salem, Va.

The American Roentgen Ray Society

Will hold its annual meeting in Montreal, Canada, September 20-23, under the presidency of Dr. A. H. Pirie, of that city. The Mount Royal Hotel will be headquarters for this meeting. Dr. Charles L. Martin, of Dallas, Texas, is secretary of the Society.

Dr. Ward C. Curtis,

Who was last year connected with the staff of Central State Hospital, Petersburg, Va., has moved to San Angelo, Texas, for the practice of his profession. Upon graduating from the Medical College of Virginia in 1920, Dr. Curtis interned for a year at St. Vincent's Hospital, Norfolk. Since that time he has taken post-graduate work in Chicago, New York and Philadelphia, and practiced for a year at Remington, Va.

Dr. A. W. Kelly,

Of the class of '26, Medical College of Virginia, after a year's internship at Mercy Hospital, Baltimore, Md., has located at 1412 Light Street, that city.

Former Illinois Doctors, Attention!

Doctors who lived formerly in Illinois, or who are descendants of pioneer physicians of the "Illinois country" will hear with interest that Volume One of the "History of Medical Practice in the State of Illinois" is ready for delivery.

The History has been written under the supervision of a committee appointed by the Illinois State Medical Society as a commemoration of its seventy-fifth anniversary but more especially to make a living tribute to those valiant men of the medical profession who played so able a part in the exploration, settlement and development of the Illinois country.

This History of medical practice in the State of Illinois, embodies in the course of its narration, an interesting and illustrated digest of the early efforts of white settlers in Illinois, with specific allusion to the share in these tasks, performed by medical men. Included are portraits of rare interest, reproductions of historic documents, excerpts from diaries, personal letters, human reminiscences of days fraught with peril, filled with hope, and not devoid of humor, through a period of about 250 years. Attics, family albums, safe deposit vaults, and state records have been ransacked to produce the material needed for this chronicle, which is a miniature encyclopedia of scientific advance in the Illinois country, which formerly included the territory of about six of the Central States.

The edition is limited. It will not be reprinted. A place in every physician's library is merited by this volume, both as a tribute to the men who blazed the trail for modern scientific medicine and as an ever-present reminder and authority as to the great advances being made in medicine every day. Volume One is now ready. Volume Two will follow soon. Future years will bring other volumes so that this History will be an ever virile monument to the men and incidents whom it would honor. Orders may be sent to Committee on Medical History, Illinois State Medical Society.—Medical & Dental Arts Building, 185 North Wabash Avenue, Chicago, Illinois,—Charles J. Whalen, M. D., Chairman.

Dr. J. A. Newcome,

Of the class of '25, Medical College of Virginia, has moved from Rossmore, W. Va., to Hurricane, W. Va.

Restoring Belroi, Home of Walter Reed.

"Belroi," the birthplace of Walter Reed, was purchased last winter by the Walter Reed Commission of the Medical Society of Virginia and the work of restoration of the house, which was in a wretched state of decay, is nearing completion. There remains to be erected a fence around the property and also the re-building of the log kitchen. As no money was given by the Society for repair work, the Commission is making an appeal for $3,000.00, with which to pay for this work.

That we may not fail in putting over this memorial, the Commission is asking for individual subscriptions with which to meet the indebtedness. Checks should be made payable to "Walter Reed Memorial Commission" and sent to Dr. Clarence Porter Jones, Secretary-Treasurer, Newport News Va.

The American Public Health Association

Is to hold its annual meeting in Cincinnati, Ohio, October 17-21, and an interesting program has been prepared. Railroads will grant the usual reduced rates to members and fellows going to Cincinnati. Any information with regard to railroad certificates and other matters pertaining to the meeting may be obtained from Homer N. Calver, Executive Secretary, 370 Seventh Avenue, New York City.

Children of Lepers Given Normal Surroundings.

In 1925 a plan for saving the uninfected children of the Culion leper colony in the Philippines was instituted by the office of the public-welfare commissioner at Manila. In order to prevent these children from contracting leprosy from their parents they are removed from the colony and placed in institutions or private homes. By January, 1926, 285 children under fifteen years of age had been removed. The youngest children are cared for in a public nursery near Culion, and if it is not possible to place the older ones with relatives or friends they are put in institutions where their care can be supervised by the office of the commissioner. Periodical health examinations are given to detect any early signs of leprosy which may appear.

School training is provided, and as far as possible the children are being prepared for happy, useful lives. They are encouraged to correspond with their parents, who are advised by monthly reports from the institutions of their progress. This correspondence is deemed safe, since all letters sent from the leper colony are thoroughly disinfected.

The discovery of a cure for leprosy makes possible the hope that the children may eventually be restored to their parents.

Dr. William S. Snyder, Jr.,

Of St. Louis, Mo., has been critically ill at Mercy Hospital, Baltimore, Md., for some time. Dr. Snyder was married to Dr. Grace B. Rollins, of Richmond, Va., June 25th.

Dr. and Mrs. D. B. Stuart,

Of Dublin, Va., have moved into their new home on Maple Avenue, that place, and state that it was built with "the latch string hanging on the outside" for their friends.

Dr. Blanton P. Seward

Returned to his home in Richmond, Va., early in August, after a visit of several weeks at Mayo Clinic, Rochester, Minn.

The Inter-State Post-Graduate Assembly of North America

Will be held in Kansas City, Mo., October 17th to 20th, inclusive, and pre-assembly clinics will be held on October 14th and 15th. Dr. William B. Peck, Freeport, Ill., is managing director of the Assembly, and Dr. G. W. Crile, of Cleveland, Ohio, is chairman of the Program Committee.

Dr. and Mrs. Don Preston Peters,

Lynchburg, Va., motored to Rochester, Minn,. last month, where Dr. Peters expected to attend the Mayo Clinic.

Dr. J. Blair Fitts,

Richmond, recently suffered some bruises and cuts about the head in an automobile collision near this city.

Bolsheviki Higher Mathematics.

Each year has	365 days
If you sleep 8 hours a day, it equals	122 days
This leaves	243 days
If you rest 8 hours a day	122 days
This leaves	121 days
There are 52 Sundays	52 days
This leaves	69 days
If you have Saturday half-holiday	26 days
This leaves	43 days
If you have 1½ hours for lunch	28 days
This leaves	15 days
Two weeks vacation	14 days
This leaves	1 day
This being Labor Day, no one works	1 day

—*The Medical World.*

Dr. Charles W. Putney,

After a post-graduate course in Philadelphia, announces the opening of his offices in the Professional Building, Staunton, Va., for the practice of surgery and gynecology.

Consolidation of Two Well Known Drug Firms.

The consolidation of Merck and Company, of New York, N. Y., and the Powers-Weightman-Rosengarten Company, of Philadelphia, July 1st, brought together two of the oldest chemical establishments in the United States. The name of Merck has been identified with the chemical industry since the seventeenth century, and Powers-Weightman-Rosengarten Company date back to 1818. Mr. George W. Merck, son of the founder of Merck and Company, is president, and Mr. Frederic Rosengarten is chairman of the board of directors. The main office of the new company is at Rahway, N. J., and there are branch offices in Philadelphia, New York, St. Louis and Montreal. The works are at Philadelphia and Rahway. We extend our good wishes to the consolidated firm.

The American Hospital Association

Will hold its annual meeting in Minneapolis, Minn., October 10th to 14th, under the presidency of Dr. Richard G. Brodrick, of Oakland, Calif. Headquarters for this meeting will be the Municipal Building which seems especially planned for these large conventions. There will be a large number of exhibitors and an excellent program has been arranged. The Pre-Convention Number of *The Bulletin of the American Hospital Association*, issued during the summer, gave a number of attractive pictures of the convention city and gave many interesting facts about the Association. Additional information about the meeting may be obtained from the executive secretary, Dr. William H. Walsh, 18 East Division Street, Chicago, Ill.

The U. S. Civil Service Commission.

Washington, D. C., announces an open competitive examination for Assistant Chemist, for the Departmental Service in Washington, D. C., and positions requiring similar qualifications for duty in the field. Applications must be on file with the above named Commission not later than September 27, 1927.

Applications for bacteriologist must be on file with the Commission in Washington, D. C., not later than October 4.

Dr. George Hankins,

Williamsburg, Va., is out again after undergoing an operation for appendicitis at Buxton Hospital in Newport News, Va.

New Hospital Building Under Construction.

Work has been begun on the new building for the Mary Washington Hospital of Fredericksburg, which is to be erected at a cost of about $85,000. The new building is being erected on the site of the old hospital and during the period of construction the hospital is being housed at the Maury Hotel. It is expected to have the new building ready about next May.

The Southwestern Virginia Medical Society

Will hold its semi-annual meeting in Bristol, September 22nd and 23rd, under the presidency of Dr. Z. V. Sherrill, of Marion. Dr. E. G. Gill, Roanoke, is secretary-treasurer. There will be a symposium on "Pulmonary Tuberculosis" and many interesting volunteer papers as well.

Dr. C. O. Foree,

Recently of Pocahontas, Va., has moved to Athens, Tenn.

Boy Scouts of the Kingdom of Siam.

The eighth annual report of the Boy Scouts' Organization in the Kingdom of Siam for the year 2466 (reckoned from the birth of Buddha and equivalent to 1924 A. D.), recently received by the Children's Bureau, gives an interesting account of scout activities in Siam. At that time the organization had a membership of 32,544.

Dr. I Keith Briggs,

South Boston, Va., left early in September for Chicago, where he will take up post-graduate work in surgery. He will also attend the Mayo Clinic while away.

Dr. and Mrs. R. H. Rowe

And family have recently returned to their home at Exeter, Va., after a vacation spent at their former home, Hickory, N. C. Dr. Rowe has been for the past several years physician for the Stonega Coke and Coal Company, at Exeter, Va.

Dr. R. L. Hudgins,

Farmville, Va., is spending several months in New York City, where he is taking post-graduate work in obstetrics and diseases of children.

Dr. Richard H. Meade,

Of Richmond, Va., former medical missionary to China, has been appointed assistant professor in surgery and gynecology at the University of Virginia, effective this fall. He studied medicine at the University of Virginia and Harvard University Medical School, graduating from the last named. He later entered the mission field and was stationed at St. James Hospital, Anking, China, for three years.

Attention!

If you are interested in one of the best small town and country practices in Virginia, write to Dr. Ray A. Moore, Harvard Medical School, Boston, Mass.—(*Adv.*)

Obituary

Dr. Sparrell Simmons Gale.

On the 19th of August the city of Roanoke and Southwest Virginia were shocked and saddened by the news of the death of S. S. Gale, beloved physician, prominent surgeon, loyal citizen, true friend and Christian gentleman. Dr. Gale was prominent in medical societies, having been president of the Roanoke Academy of Medicine, The Southwest Virginia Medical Society, The Tri-State Medical Society. At the time of his death he was Chief Surgeon of the Norfolk & Western Railway. He leaves behind a large host of friends and patients who loved him sincerely:

Speak not of him as dead,
This friend of yours and mine,
Nor stand with drooping head
And for his presence pine;
He has but burst his mortal shell
And gone on home, loved ones to tell
That all the world is going well
And everything is fine.

'Tis true, we loved him well,
This friend, both tried and true,
And you can comfort me
And I can comfort you
With thoughts of how he's gone before
To some far-distant blissful shore,
Where with those other friends of yore
Old friendships he'll renew.

Think not of him then, dead,
But think of him as free
From earth, and garbed instead
In robes of purity;
Not fettered now by time and space,
But moving on with time apace,
With other mortals, saved by grace,
In Immortality.

G. M. MAXWELL.

Dr. Gale was born in Salem, Va., July 20, 1876. Upon completion of his academic education, he studied medicine at the College of

Physicians and Surgeons of New York City, from which he graduated in 1901. He had been a member of the Medical Society of Virginia since 1903 in which he served one term as a member of its executive council. His wife and three children survive him.

Dr. Scott William Brewer,

Beloved physician of Rockingham County, died at his home at Singer Glen, Va., June 6, death being due to angina pectoris. Dr. Brewer was born in Rockingham County, sixty-eight years ago, and after attending Randolph-Macon College and the University of Virginia, studied medicine at the Medical College of Virginia, receiving his degree from that school in 1885. Later he took a post-graduate course in New York. Dr. Brewer was active in his local medical society, was for some time a member of the Rockingham County Board of Health, was a member of the Medical Society of Virginia, and an Odd Fellow. His wife and a son survive him.

Dr. E. W. Walker,

Appalachia, Va., was drowned in Powell's River, a few miles below Big Stone Gap, while fishing, on August the 19th. The boat capsized and Dr. Walker attempted to save one of the men, but both were drowned. His body was taken to his old home, Manchester, Ky., for burial. Dr. Walker was 36 years of age and graduated from the University of Louisville, School of Medicine in 1915. He had been for some years a member of the Wise County Medical Society and the Medical Society of Virginia. His wife and four children survive him.

Dr. George W. Stark,

A prominent physician of Albemarle County, Va., died suddenly, August 15th, while on his way to see a patient. He was born in Essex County, Va., 73 years ago and graduated in medicine, from the Washington University, Baltimore, in 1877. He had been a member of the Medical Society of Virginia since 1885. His wife and a daughter survive him.

Dr. William Thomas Swanson,

Of Callands, Va., died August 5th at a hospital in Danville, Va., death being due to pneumonia, though he had not been in robust health for a year. Dr. Swanson was 73 years of age and graduated from the College of Physicians and Surgeons of Baltimore in 1877. He was a member of the Pittsylvania County and Danville Medical Society and was at one time a member of the Medical Society of Virginia. His wife died a number of years ago and he had no children.

Dr. William T. Erwin,

Senior assistant surgeon at the National Soldiers Home, Hampton, Va., died suddenly, August 25th, while walking through the grounds. He was 55 years of age and a graduate of Chattanooga Medical College of the class of '97. He had been connected with the National Soldiers Home in this State for the past six years. His body was taken to his former home in Tennessee for interment. His wife and two sons survive him.

Dr. Robert Porter,

Of Roanoke, Va., died at his home in that place, August 14th, at the age of 37 years. He was formerly of Rural Retreat, Va., and studied medicine at Vanderbilt University, Nashville, Tenn., from which he graduated in 1907. His wife and a son survive him.

Dr. Leonard Wood,

Governor General of the Philippine Islands, died at Peter Bent Brigham Hospital, Boston, August 7th, at the age of 66 years. He graduated from Harvard University Medical School in 1884 and was appointed assistant surgeon in the medical corps of the U. S. army in 1886. He achieved distinction as a line officer as well. Following the Spanish-American War, he was appointed military governor of Cuba and greatly assisted the special commission appointed to investigate the transmission of yellow fever. He was active in his work for his country and was honored in many ways.

Dr. H. Edwin Lewis,

Managing editor of *American Medicine*, died August 6th, at his home in Ossining, N. Y., at the age of 52 years. Always of a literary turn of mind, he became editor of the *Vermont Medical Monthly*, shortly before his graduation from the University of Vermont in 1897. He later moved to New York and was for two years editor of the *International Journal of Surgery*, before taking over the management of *American Medicine* in 1908. His literary ability won for him many honors, one of them being the presidency of the American Medical Editors' Association.

Mrs. Josephine Macrum Harris,

Wife of Dr. William Lett Harris, of Norfolk, Va., died at the home of her sister in Oakmont, Pa., August the 18th. The interment was made at Oakmont.